NATURAL RESOURCES SYSTEMS PROGRAMME

FINAL TECHNICAL REPORT - R7856

Strengthening Social Capital for Improving Policies and Decision Making in Natural Resources Management

ANNEX B

The Role of Social Capital and Local Policies in the Highlands of South-western Uganda

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Pascal Sanginga and Rick Kamugisha

Executive Summary

The use and management of natural resources in the highlands ecosystems are susceptible to multiple forms of conflicts due to the fragile agro-ecological and social space characterised by the utilisation of natural resources for multiple purposes, by multiple users, and involve complex and unequal relationships among a wide range of social actors and stakeholders. While conflicts between local communities' livelihoods and national, and international concerns for conservation of bio-diversity and environment (forest conservation, protected areas, bio-diversity, wetlands and water) are increasingly receiving significant amount of research and policy attention, little attention has been paid to local conflicts over the use and management of agricultural-based natural resources (soil, plants, trees, and animals) by small scale resource poor farmers. These natural resources management (NRM) conflicts are increasing, and if continued to be ignored can escalate and result into further degradation of natural resources, erosion of social and human capital and pose significant challenges to achieving sustainable rural livelihoods.

The objectives of the study were to:

(i) increase our knowledge and understanding of the nature, types and dimensions of NRM conflicts;
(ii) investigate the mechanisms, institutions and procedures for minimizing conflicts in agriculture and NRM;
(iii) analyse the effectiveness of local policies and byelaws in managing NRM conflicts, and improve understanding on how positive synergies between social capital and policy can be realised to manage conflicts,
(iv) determine the potential effects of conflicts on management strategies and livelihood options of small scale farmers, and their implications on building or diluting social capital, and
(v) develop strategies and formulate recommendations for improving the relevance of local policies and social capital in minimizing conflicts in natural resources management and use.

The implementation of the study required a creative combination of alternative research methods and sources of information to ensure the participation of local stakeholders crosscheck and validate information collected in four selected sub-counties in Kabale district, in the south-western highlands of Uganda. Data analysis involved appropriate qualitative analytical techniques (content and narrative analyses), and relevant bivariate and multivariate statistical tools.

Based on the analysis of selected case studies, key informants and household interviews, the study identified over 700 conflict cases. These include conflicts between multiple local resource users (agriculturalists, livestock owners, upstream and downstream users) for multiple purposes (cultivation, grazing, income, and domestic uses, etc.), and rules (national policies, byelaws and community regulations), as well as conflicts between local communities' concerns for better livelihoods and national and international concerns for environment conservation. The types and dimensions of these conflicts are complex: ranging from intra-and supra-household gender relations, land disputes to antagonist, distrustful relationships and violent clashes amongst farmers, and between farmers, local communities, government and external institutions. These conflicts are fuelled by the excessive fragmentation of the very small agricultural land, and the high competition over

the use of farmland. Because about one third (31%) of reported conflicts directly involved women, a critical gender perspective is essential in any NRM conflict analysis. The endowment of both bonding and structural social capital, measured as membership in local organization and collective action, significantly decreased the probability of conflict occurrence. Similarly, the endowment in linking social capital, expressed as participation in research and development activities and contact with extension and development organizations increased the probability of reporting conflicts. The results of this study suggest that the current emphasis of social capital in NRM literature should be understood within a broader context of the socio-economic and political economy of NRM. Instead of idealizing social capital, taking it for granted, or ignoring its diverse forms and dimensions, it is important to examine the ways in which social capital and local policies complement each other in solving conflicts over the use and management of natural resources. On the other hand, many conflicts erupt because of poor implementation of byelaws, many of which are seen as outdated and lacking local participation in their formulation and implementation.

While the specific mechanisms for managing conflicts vary with the conflict type, nature, levels and stakeholders or actors involved, the most commonly used mechanisms were arbitration and mediation by the village local council 1 (LC1) members who facilitate negotiation between competing parties to reach a mutually agreed decision. Conflicts opposing local communities' livelihoods and national and international concerns for conservation of bio-diversity and environment in communities surrounding the park were often resolved by the use of multiple forms of coercion (violence, harassment, intimidation, fines and imprisonment), resulting to antagonist and distrustful relationships and violent clashes between local communities and park authorities. Analysis of correlation between different types of conflicts and NRM practices revealed that there was a positive and significant relationship between different types of conflicts and the use of NRM practices. On the other hand, empirical results show that far from undermining the adoption of NRM practices, conflicts often played a positive role in influencing the adoption of agroforestry technologies, constructing new terraces and trenches for protecting soil against erosion and planting trees.

Based on the findings, we suggest the "synergy approach" of social capital and local policy for managing conflicts. This approach contends that policies or social capital alone do not possess the resources needed to promote broad-based and sustainable conflict resolution strategies. With current decentralization in Uganda, there are significant opportunities that research and development can utilize to influence policies, and to translate research results into policy and decision-making of wider communities. However, to move the findings of this study from analysis to policy, a participatory policy action research process is needed to enhance the capacity of local communities and decentralized local councils to prevent, manage and transform NRM conflicts into opportunities for collective learning, collaboration and action.

1 Introduction

1.1 Problem Statement

Natural resource management (NRM) is becoming a relatively new and expanding thrust in policy research on African agriculture (Omamo 2003). Natural resources constitute the basis of rural livelihoods systems and hold the key to increase food production and sustainable development in the intensively cultivated highlands of eastern and central Africa. However, the degradation of natural resources is intensifying in the highlands systems and is one of the root causes of poverty. Several scholars have concluded that if natural resources are to be protected against the risk of destruction, it is essential that governments devise a range of policy instruments that can influence behaviour for the adoption of technology innovations and institutions that promote sustainable management of natural resources to alleviate poverty (Scherr *et al.* 1996; Tyler, 1999; Buckles, 1999; Eberlee, 1999; Shiferwa and Holden, 2000 and Egulu and Ebanyat, 2000).

Izac and Sanchez (2001) defined NRM as "the sustainable use of the resources base of agriculture in order to meet the production goals of farmers as well as the goals of the rest of the community". This definition stresses that NRM systems are characterised by the utilisation of natural resources for multiple purposes, or by more than one user, and involve a combination of uses, users, resources, uses of resources, and rules which govern resource use. Therefore, as Castro and Nielsen (2003) and Hendrickson (1997) put it, NRM is in many ways a form of conflict management. People everywhere compete for the natural resources they need to ensure or enhance their livelihoods (Buckles and Rusnak 1999).

The recent attention to NRM conflicts reflects a growing awareness of the scope, magnitude, and implications of NRM conflicts (Castro and Nielsen, 2003; Means *et al.* 2002; ECAPAPA, 2001; Mascarenhas, 2000; Buckles and Rusnak, 1999; Tyler, 1999; Scott, 1998 and Hendrickson, 1997). With the current trends of persistent poverty, population pressure, urbanization, environment conservation, decentralization and democratization, conflicts over the use and management of natural resources are intensifying and are contributing to further degradation of natural resources. Promoting and supporting alternative strategies for minimizing these conflicts is of critical importance for policy, research and development. Therefore, the management of the inevitable conflicts in NRM is important as public good, and merit policy support (Tyler 1999).

However, although resource management and conflicts are closely linked, only recently have policy-makers, resource managers, research and development practitioners attempted to address the connection. Any policy support must rely on a detailed and systematic understanding of the nature, types, dimensions and implications of conflicts, and their management mechanisms. Understanding conflict is a prerequisite to developing approaches to solve it (Buckles and Rusnak 1999). Better understanding of conflicts can enhance the problem-solving capacity of policy-makers, research, development and local communities to consider what policy options, institutions and innovations can be formulated or promoted to improve the management of natural resources.

1.2 Scope of the Study

For the purposes of this study, conflict is defined as "a situation in which two or more social entities or parties (however defined or structured) perceive that they possess mutually

incompatible goals or interests, express hostile attitude, or take actions which damage the other parties' ability to pursue those interest " (Mitchell 1981). The use and management of natural resources are susceptible to multiple forms of conflicts in the intensively cultivated and degraded highlands of eastern and central Africa, due to the fragile agro-ecological space where actions by one individuals or groups often generate off-site effects in a social space characterised by complex and unequal relationships among a wide range of social actors and stakeholders.

The study focused on conflicts over the use and management of agricultural-based natural resources in the highlands of Kabale in south-western Uganda. While conflicts between local communities' livelihoods and national and international concerns for conservation of bio-diversity and environment (forest conservation, protected areas, bio-diversity, wetlands and water) are increasingly receiving significant amount of research and policy attention (Hart and Castro 2000, Scott 1998, Borrini-Feyerabend 1996, Means *et al.* 2002, Castro and Nielsen 2003, Bloomley 2003), little attention has been paid to local conflicts over the use and management of agricultural-based natural resources (soil, plants, trees, and animals) by small scale resource poor farmers. Yet, these are probably the most common and widespread conflicts affecting natural resource management practices and livelihood options of the large number of small-scale farmers who constitute the bulk of rural population in sub-Saharan Africa. Because of their importance, their policy relevance cannot be overemphasized in a country like Uganda where more than 85% of population derives their livelihood from agriculture. If continued to be ignored, such NRM conflicts can escalate and result into further degradation of natural resources, erosion of social capital, human capital and pose significant challenges to achieving sustainable rural livelihoods (Castro and Nielsen 2003).

In this report, we use the term policy in its broad sense to refer to broad guidelines on desired objectives or goals within nations, governments, institutions or organizations, and their implementation resulting from public (state), private, formal or informal institutions to achieve defined goals and objectives. Policies can be generated at different levels: international, national, regional, district and local levels; and can operate at all levels both public and private spheres, and community organisations. Policies can be formal (e.g. laws that govern land tenure) or informal (e.g. social customs and conventions); created (e.g. as a result of deliberate political or policy decisions) or may evolve over time; present at local, organisational, national, and international levels. We are particularly concerned with those local level policies and community regulations or byelaws. Byelaws are defined in the Local Government Act (1997) as rules made by lower local councils as useful guidelines and regulations of general application to guide agricultural practices and prevent such practices that could be detrimental to the community. These byelaws or local arrangements and institutions for natural resource management are now receiving greater attention as a viable alternative for enforcing government policies and rectifying their inefficiencies (Gebremedhin *et al.* 2002) in agriculture and natural resource management.

The policy environment for natural resources management has changed dramatically in recent decades. Recent decentralization efforts in Uganda have shown promising improvement in the participation of local people in the policy decision- making process. Under decentralization, various laws and institutions have been created to ensure the devolution of functions, powers and services to the districts and lower levels. However, the most appropriate means for implementing policies of decentralization are uncertain, and can also fuel conflicts (Means *et al.* 2002). Decentralization introduces legal pluralism, the operation of different bodies of laws, formal institutions and informal institutions and

procedures within the same political space. Tyler (1999) observed that poorly designed or disjointed policies have been found to be a source of conflicts over the use of natural resources. Government policies can block decisions and actions of local communities, and weaken local institutions and incentives to resolve conflicts and regulate the sustainable management and use of natural resources by competing stakeholders. The extent to which these policies, institutions and procedures overlap, lack coordination and harmony or are contradictory can be a source of conflicts.

Effective decentralisation therefore must be based on effective and sustainable local institutions for engaging local communities directly in the articulation of their policy needs in the analysis, design and implementation of policies and innovations (Rasmussen *et al.* 1995). Omamo (2003) stresses that a search for options for sustainable community-based collective action in NRM lies at the core of the agenda of policy research in NRM. Recent research has shown the importance of social capital foundations for successful policy interventions, conflict resolution and community development. 'Social Capital' is defined as the features of social organizations (social networks, social interactions, norms, social thrust, reciprocity, cooperation) that facilitate coordination and cooperation, and that enable people to act collectively for mutual benefits (Woolock and Narayan 2000). It encompasses the nature and strength of existing relationships between members, the ability of members to organize themselves for mutually beneficial collective action around areas of common need and managing the social structures required to implement such plans; the skills and abilities that community members can contribute to the development process (Uphoff and Mijayaratna 2000). Social capital is an important asset that can be called on in a crisis, to the extent that communities endowed with a diverse stock of social capital are in stronger position to confront poverty and vulnerability, resolve disputes, take advantages of new opportunities (Collier 1998, Grootaert 1998, Narayan and Pitchet 1999, Grootaert 2001), and benefit from more effective paths to sustainable development so that all forms of capital, including natural capital, can be enhanced (Wallis 1998, World Bank 2000, Ostrom 1990).

In this paper we argue that neither policies nor social capital alone possess the resources needed to promote broad-based and sustainable conflict minimizing strategies. Complementarities and synergies forged between social capital and local policies are required. The central hypothesis of the study is that effective and sustainable NRM is more likely when conflicts are minimized, and when local communities, local leaders and policy-makers collaborate in making beneficial decisions about the use and management of natural resources.

1.3 Objectives of the Study

The purpose of the study is to assess the role of social capital and local policies or byelaws in minimizing and managing natural resources conflicts, and identify alternative policy options and strategies that can help minimize conflicts in the use and management of natural resources in the highlands of Kabale, south western Uganda.

The specific objectives of the study were to:

i. Increase knowledge and understanding of conflicts (dimensions, levels, types, causes, etc.) in NRM and use
ii. Investigate the mechanisms, institutions and procedures for minimizing conflicts in agriculture and NRM

iii. Analyse the effectiveness of local policies and byelaws in managing NRM conflicts, and improve understanding on how positive synergies between social capital and policy can be realised to manage conflicts
iv. Determine the potential effects of conflicts on management strategies and livelihood options of small scale farmers, and their implications on building or diluting social capital
v. Propose strategies and formulate recommendations for improving the relevance of local policies and social capital in minimizing conflicts in natural resources management and use

1.4 The Research Context

Concerns that technologies emanating from agricultural research in the highland areas had not yielded results commensurate with investments to improve and sustain productivity and natural resource base led to the formation of the African Highlands initiative (AHI) in 1995. AHI was established as an ecoregional program to focus on the issues of land degradation and agricultural productivity in the highlands of East and Central Africa. AHI's guiding philosophy is a client-driven approach using participatory methods and an effective research development continuum where research partners, using collaborative, synergic partnership can bring together diverse contributions to foster farmers' innovation and collective action for design and dissemination of appropriate, integrated technologies and methods for improving NRM in the diverse and complex situation (AHI 1999).

Recognizing that policy support is always needed for the adoption of NRM innovations, AHI established a policy-working group to increase the policy relevance of research at the local level, to identify and undertake joint priority activities, and to design alternative policy instruments to facilitate adoption of NRM technologies. The AHI local NRM policy research initiative focuses on assessing the effects of policies on NRM, the degree of harmony or conflict of policies on NRM as they are implemented at local levels, the effectiveness of local NRM policy processes and assessing the relationships between policy change, technology adoption, and NRM (Place 2001). In Kabale, Uganda, AHI is supporting efforts to catalyze local political support to promote the adoption and impact of sustainable NRM innovations and policies that require concerted action and collaboration.

This study builds on and complements a participatory policy action research project in Kabale[1]. Its purpose is to strengthen the social capital of pilot communities to improve their participation in local policy formulation, implementation and decision making to accelerate the adoption of sustainable NRM practices. In other words, the project aims at linking participatory research to policy and decision making to accelerate the adoption of NRM technologies.

1.5 Structure of the Report

This report is organised in six sections. First we discuss the concepts of conflicts, policy and social capital and their relationships, followed by a description of the research methodology. The empirical findings of the study are discussed in three sections. First, we analyze rural

[1] R7856 "Strengthening social capital for improving policies and decision making in NRM" funded by the Natural Resources Systems Programme (NRSP) of the UK Department for International Development.

livelihoods and natural resource management and use in the highlands of Kabale. We then examine and assess the dimensions and nature of social capital and describe the institutional and policy framework. The sections that follow examine the multiple faces of NRM conflicts in Kabale, their consequences, and assessed the different conflict resolution mechanisms and their effectiveness. The concluding chapter analyzes the implications of the results for policy, research and development. The study proposes a participatory learning and action research for scaling up, supporting and promoting relevant policy action for minimizing conflicts.

2 Conceptual Framework and Methodology of the Study

2.1 Analyzing Conflicts

We defined conflicts as situations involving people or social groups with different interests, and mutually antagonist tendencies and opposing influences competing for the use of limited resources to ensure or enhance their livelihoods. Conflicts are a relationship among two or more opposing parties, whether marked by violence or not, based on actual or perceived differences in needs, interests, and goals. Their manifestations, dimensions and level of intensity vary greatly. They can be implicit or explicit, proximate, local, regional, national or international, latent or violent. These multiple dimensions of conflicts in natural resource use and management, point to the fact that natural resource conflicts generally have multiple causes. Conflict management is broadly defined to encompass a wide range of mechanisms and institutions for both the prevention and resolution of disputes, including negotiation, avoidance, arbitration, conciliation and adjudication.

Theoretical studies on resource conflicts and conflict management (Burton and Dukes 1990, Cousins 1996) differentiate between causes, levels and phases of conflict; and make a distinction between management problems, disputes and conflicts. These distinctions have implications for conflict management. Hence, management problems involve arguments or differences over the choice of alternatives among persons having the same goals and interests; and these are best dealt with through processes of problem-solving, improved communication and improved personal interaction. Disputes, involve competing but negotiable interests: here, settlement processes such as judicial procedures, negotiations and bargaining are appropriate. Conflicts, on the other hand may be bound up with non-negotiable human needs and questions of identity. They thus require in-depth understanding of relationships, and often the assistance of a third party (Maganga *pers. com.*)

Mascarenhas (2000) recommends that it is essential to have a pluralistic approach that recognizes the multiple perspectives of stakeholders and the simultaneous effects of diverse causes in natural resource conflicts to understand the initial situation and identify strategies for promoting change. Ramizez (1999) suggests a conceptual framework, which can be used as a guide for inquiry into conflict management in NRM. Stakeholder analysis will help to identify groups and individuals having different opinions and conflicting interests in the management of natural resources. It helps separate the multiple causes of conflicts and bring a wealth of knowledge to bear on the identification of sources of conflicts, the power relations, interests with a view of identifying who is affected by, or who can affect or influence patterns of conflicts in NRM (Buckles and Rusnak 1999). In this context, conflict

analysis is a learning process to help stakeholders to better understand the causes, the context and the people involved in conflicts.

More recently, Means *et al.* (2002) outlined the main steps in conflict analysis, and present some tools and steps for understanding and identifying the driving forces of conflicts and how to initiate a process of conflict management. An analysis of conflicts should begin with identifying and describing the conflict, its boundaries and interrelationships, the origins, levels and issues of the conflict, identifying, analyzing and involving the stakeholders (those who are affected or are affecting conflicts), and examining the impacts of policy. An analysis of conflicts should seek to:

- Clarify the range of issues that need to be addressed
- Identify the impacts of conflicts
- Identify and prioritize the causes of conflicts
- Identify and determine the stakeholders and their interests, needs and views on the conflicts
- Consider particular contributing factors (policy, culture, gender, etc)
- Identify what information about the conflict already exists and what further information is needed
- Increase the understanding of linkages between the broader social, economic and political context and conflicts
- Enhance the problem solving and analytical skills of local stakeholders in understanding and addressing conflicts

2.2 Defining and Measuring Social Capital

Social capital is one of the five capital assets that form the now popular sustainable livelihood framework (Carney and Farington 1998). A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. The asset pentagon that lies at the heart of livelihoods analysis shows resources which people use in their livelihood strategies. These are the basic resources building blocks upon which households and communities are able to engage in productive activities and social relations. Livelihood assets comprise five different types of capital: natural, financial, physical, human and social.

- Human capital: Skills, knowledge, ability to work, health; necessary to make use of any other types of capital.
- Physical capital: productive assets such as housing, tools, infrastructure, water supplies, schools, social amenities whose ownership can contribute to improving livelihoods or income
- Financial capital: consists of cash, savings, loans and gifts, remittances or other financial instruments.
- Social capital: Social resources determined by relationships with others. Networks and connectedness, membership of groups, relationships of trust, reciprocity and exchange, cooperation, collective action and access to wider social institutions.
- Natural capital: Quantity and quality of the natural resource base available to people - land, forests, livestock, water, rainfall, aquatic resources, biodiversity, air quality, etc.

We are particularly concerned with two of these assets: social and natural, as well as policy processes and institutions. As defined earlier, 'Social Capital' refers to the features of social organizations (social networks, social interactions, norms, social thrust, reciprocity,

cooperation) that facilitate coordination and cooperation, and that enable people to act collectively for mutual benefits (Woolock and Narayan 2000). It encompasses the nature and strength of existing relationships between members, the ability of members to organize themselves for mutual beneficial collective action around areas of common need and managing the social structures required to implement such plans; the skills and abilities that community members can contribute to the development process (Uphoff and Mijayaratna 2000).

Efforts to examine theoretical and methodological aspects of measuring social capital are still relatively recent (World Bank 2000). Obtaining a single measure of social capital is difficult given the comprehensive, multidimensional and dynamic aspects of social capital. In this study, we attempt to unbundle social capital into its dimensions to generate appropriate measures. At the community level, Pretty (2003) distinguished three types of social capital: bonding, bridging and linking capital. Bonding social capital describes the links between people, and refers to social cohesion within the group. Bridging social capital refers to the horizontal relationships of social support, between members of a community, family or household, and between different communities and groups (Narayan 1999). Bridging social capital describes the capacity of groups or communities to make links with other groups, while linking social capital describes the ability of groups to engage with external agencies, either to draw on useful resources or to influence policies (Pretty 2003). Therefore, communities can be characterized by their endowments in *bonding, bridging* and *linking* social capital, by assessing the following items:

- Social organizations: Number and density of local organizations and associations in the community
- Social networks: relations between people within organizations or associations or intra community ties (bonding social capital)
- Horizontal and vertical relations between organizations, institutions and communities or extra community ties (bridging social capital), inter-community networks and links with external and formal organizations
- Extent of community social relations and formal institutions, diversity of relations and associations
- Institutional efficiency: capacity of social groups to act in their collective interests and to manage conflicts will depend on the quality of the informal and formal institutions. An index of institutional efficiency will be developed by examining items such as competence, credibility, coherence of policies, capacity, embeddedness, complementarity, accessibility, trust, confidence, relationships, impetus, cooperation, group functioning, participation in decision and making, quality of service delivery

At the individual and household levels, Uphoff and Mijayaratna (2000) distinguished between *structural* and *cognitive* forms of social capital. Structural social capital refers to the networks, linkages and practices within and between communities. In contrast, cognitive social capital refers to the attitudes, values, beliefs, social norms and behaviours that exist within a community (Grant 2001). The *structural* forms of social capital refer to items such as:

- membership in formal and informal associations
- heterogeneity and diversity of membership
- participation in decision making, contribution to groups, roles and rules
- resources mobilization, communication
- participation in local communities, and pro-action in social context

- community engagement, spirit of voluntarism and charitable involvement

On the other hand, c*ognitive* forms of social capital include:

- Interpersonal trusts, feeling of trust and safety
- Norms and values that facilitate exchange, cooperation and collective action
- Altruism (giving climate, spirit of helping others
- Local commitment
- Confidence in formal and informal institutions

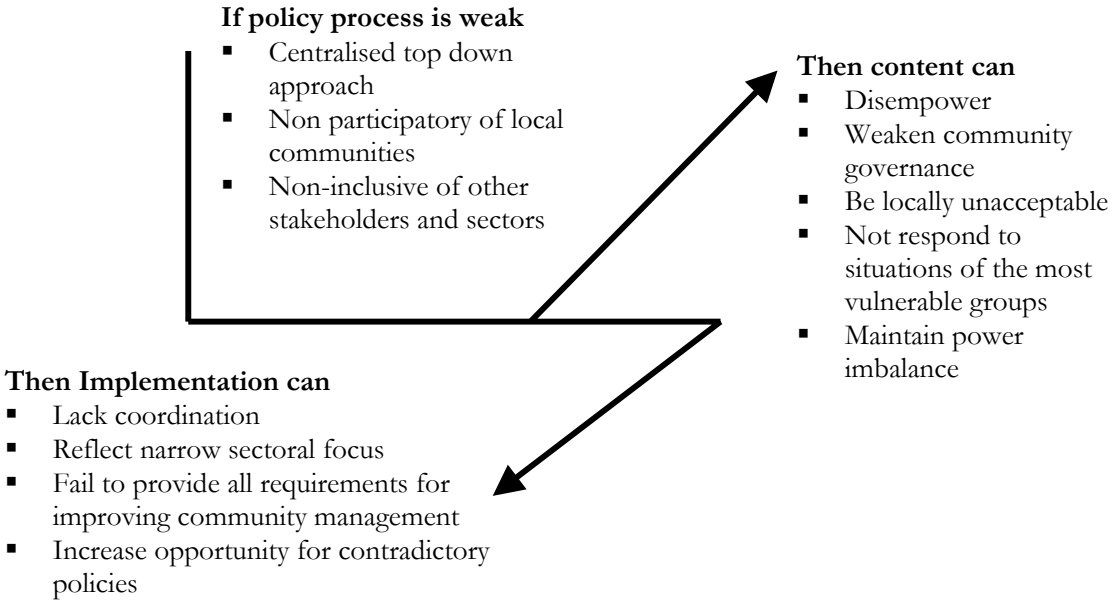
Both structural and cognitive social capital must be combined to represent the potential for mutually beneficial collective action that exists within a community (Grant 2001). Cognitive social capital predisposes people towards mutually beneficial collective action, and structural social capital facilitates collective action. Relations of trust lubricate cooperation. Reciprocity increases thrust, and contributes to the development of long term obligations between people, which helps in preventing or resolving conflicts. When a community is pervaded by distrust or conflicts, cooperative arrangements and MBCA are unlikely to emerge. Common rules, norms and sanctions are the mutually agreed upon and handed-down drivers of behaviour that ensure group interests are complementary with those of individuals. Sanctions ensure that those who break the rules know they will be punished (Pretty 2003).

Any analysis of natural resource management conflict needs to consider all these different aspects and dimensions of social capital, as this will determine whether communities can act as a cohesive unit (bonding), whether it has links with other community organizations (bridging) and can access institutions with more power and resources (linking). In this study, the household and community surveys asked questions about different dimensions of community social capital (bonding, bridging and linking) and individual measures of social capital (structural and cognitive). Following Narayan and Pritchet (1999), we combined these measures to generate an index of social capital as a proxy of social capital.

2.3 Understanding Policy Process and Content

A sound and consistent policy is fundamental to strengthening social capital and resolving NRM conflicts in rural communities. Thomson (2000) recommends that providing effective policy support requires paying attention to the policy process, content and co-ordination. Policy process is the process in which the policy is formulated, implemented and evaluated. Policy content refers to the objectives, actions and requirements and mode of delivery of policy. Policy aimed at strengthening local communities should consider and be adaptive to local conditions, and should be built around accurate information of local communities' needs, goals, constraints, institutions, practices and capacities for implementation. Policy co-ordination refers to linkages to other policy and legislation or supporting agencies at different levels of governments. The figure below illustrates the relationship among the three different aspects of policy

Figure 1: Relationships among different aspects of policy (process, content and implementation)



Source: Means *et al.* (2002)

Policy that enhances social capital and minimizes conflicts must be participatory and involve local stakeholders in its formulation, monitoring and implementation. The strength of this process will greatly influence both the content and co-ordination with other stakeholders and local communities providing needed inputs. Means *et al.* (2002) further provides some examples of problems that are frequently encountered within communities and that contribute to conflicts (Table 1).

Table 1: Common problems of policy and legislation that result in conflicts

Problem	Key elements of conflicts
Lack of participation of local Stakeholders in policy formulation	– NRM Policy is formulated in centralized decision-making – The district or local agencies and communities that are responsible for implementation are not involved – There is a limited input of information on local needs, conditions, constraints – The resulting policy may not be locally effective or acceptable – Policy may contradict or not address local priorities – Few opportunities for community-based initiatives to share learning and needs upwards with policy-makers, further reduce local stakeholders' influence on the direction or content of policy planning
Lack of participation in process of monitoring and evaluation	– There is inadequate feedback into the local problems encountered – Local authorities or communities lack opportunities to become aware of the difficulties or perspectives of the government – It stifles learning and innovation in policy formulation
Too much policy or legislations at one time impending implementation and	– A rapid succession of NRM policies and initiatives combined with decentralization process results in logjam of new policies – Policy instruments are often put out in piecemeal fashion without sufficient development

Problem	Key elements of conflicts
quality	– Often lack of coordination with other policies or agencies causing the overlap of authority and the duplication of requirements
Policy or regulations are inflexible and non-adaptive to local contexts	– Government policy is implemented in a rigid manner, and not adapted to local economic, cultural and social conditions – Lack of literacy levels and lack of public information restrict the involvement of and benefits to community members from well intentioned policies – Too many bureaucratic procedures and requirements are cumbersome or poorly understood by local people – Newly introduced management requirements complicate and escalate conflicts instead of resolving issues of NRM use and control
Policy introduces new structures that weaken traditional and local authority, institutions and practices	– The introduction of new decision-making structures or institutions weakens community governance – Traditional or other existing local management systems are disregarded or overridden – New structures undermine local leadership or create tension and resentment among community members, and erode systems that also serve to mediate conflicts within and among communities
Lack of clarity within policy on changed roles, responsibilities and duties	– Government policy is not clear regarding the changed roles and duties of village, district and national authorities – Lack of clarity may be due to a lack of or poor communication between those who make and those who implement policy – These aspects need to be clarified, but often are not, resulting in confusion and a range of disputes
Policy introduces new roles for the government without adequate support and capacity building	– NRM policies promoting greater stakeholder participation involve changed roles for government officials – Community-based approaches require new roles that are facilitative, rather than directive, and a new range of skills and attitudes that understand and support participatory processes. – The significance in this shift in roles is often underestimated, but requires a major shift in skills and attitudes. – When this support is not provided, local authorities are frequently overwhelmed by the policies and can block their implementation – Political commitment, access to adequate resources, training and a realistic timeframe are required to support this change fully.
Policy effectiveness hindered by narrow institutional goals and inadequate coordination.	– A narrow policy focus neglects critical elements of integration, coordination and the needs of other resources. – An uncoordinated approach can result in the formulation of policies that contradict each other. – A policy reform may provide for one level of need, but implementation is hindered by the lack of policy changes or the lack of contribution for other department or agencies. – Even with more authority and control, local stakeholders remain handicapped without additional support or extension programmes for other agencies.

Source: Adapted from Means *et al.* 2002.

2.4 Research Setting and Sampling Procedures

The highland areas of east Africa cover 23% of the region and house over 50% of the people (over 50 million). Population pressure has continued to increase resulting in high densities, land shortage, fragmented small farms (0.25-1.0 ha for an average family of six). In Uganda, the highlands account for 27% of land area and close to 40% of the total population. They are mostly in the south-western and western part of the country as well as in the east. The action research was conducted in Kabale district in the south-western highlands. The district is characterized by high population density (exceeding 400 inhabitants/km2in some areas), steep cultivated slopes on extreme altitudes (1500 to 2700 masl), but with an adequate bi-modal rainfall (annual average 1000mm). The majority of the hills have semi-permanent bench terraces up to the tops, developed some 50 years ago along the contours of the hills that are a common feature of Kabale district. However, many of these old terraces have seriously deteriorated, and as a result, declining soil fertility and erosion is a serious problem. It is estimated that about 90% of the district soil is affected by erosion due to slope, population pressure, deforestation, poor farming and vulnerable soil. Results of a participatory field assessment of land degradation in four pilot communities in the Mugandu-Buramba watershed estimated that between 21 and 59 t/ha of soil are lost through gully and rill erosion, collapsing terraces, and flooding of valley bottom farmlands. (Mbabazi *et al.* 2003)

Kabale is one of the eight benchmark sites of the African Highlands Initiative (AHI). AHI was established as a member of the Consultative Group (CGIAR) ecoregional program to focus on the issues of land degradation and agricultural productivity in the densely populated highlands of Eastern Africa. AHI's guiding philosophy is a client-driven approach using participatory methods and an effective research development continuum where research partners, using collaborative, synergic partnership can bring together diverse contributions to foster farmers' innovation and collective action for design and dissemination of appropriate, integrated technologies and methods for improving NRM in the diverse and complex situation.

The study applied a three stage sampling process to select sub-counties, parishes and individual farmers/households. First, we purposely selected the sub-counties of Rubaya and Bubale because of their involvement in NRM research activities by AHI, AFRENA and other development organizations. However, for comparative purpose we also selected Kashambya and Ikumba to represent different situations, dimensions and levels of social capital. The two additional sub-counties were purposively selected by "expert judgement" after an exploratory visit given the prevalence, nature and intensity of conflicts. Secondly, parishes and villages were stratified based on active participation in NRM research and development activities. Then representative households and individuals were selected in each community using a contrast or maximum variation method (Ravnborg *et al.* 2000) also known as snowball or adaptive sampling. In this method, the first person to be interviewed is chosen randomly or based on certain criteria, in this case local leaders and key informants. Then these persons were asked to nominate 4 to 6 persons who have been involved in conflict situations, or who can provide more information. The next interviews were done with these nominated persons. Each person interviewed was also requested to nominate someone else who may have different points of view, or a different perception of the conflicts situation. The person suggested was therefore the next to be interviewed, and so on, until all possible points of views were considered.

A post stratification and comparative sampling techniques (Wilson 2002, SSC 2002) helped to ensure that different categories of people were included in the study and major differentiation were captured. Significant efforts were devoted to ensure the representation

of women and other disadvantaged categories of the rural poor. We believe that the total sample of 145 farm household interviews is representative enough for more rigorous quantitative analyses that allow the generalization of the results of this study to larger population and areas of the Kigezi highlands of south western Uganda.

2.5 Data Collection

The implementation of the study required a creative combination of alternative research methods (Frankfort-Nachmias and Nachmias 1996), and sources of information to ensure the participation of local stakeholders, crosscheck and validate information collected in order to achieve the multiple objectives of the study. Data collection used participatory techniques, formal household and community surveys, case study approach and review of judiciary court cases and administrative documents. The participatory techniques included focus group discussions, resources mapping and diagramming (social, venn diagrams, resources mapping, etc), field observations, community workshops and stakeholder meetings. The research team also interviewed a total of 72 key informants: chairpersons of village local councils (15.7%), members of the village local councils (21.4%), clan elders (17.1%), leaders and members of farmers organizations and groups (27.1%), parish and sub-county chiefs and chairpersons (14.3%) and teachers (4.3%).

Proactive steps were necessary to ensure representation of women in the key informants as well as for individual interviews and case studies. The team also conducted 145 individual interviews using questionnaires with male (51.7%) and female (48.3%) farmers. In addition to these individual and household interviews, a total of 20 households representing different wealth categories, gender and household status were selected for in-depth case study analysis to better understand the levels, extent, dimensions, management mechanisms and outcomes of different types of conflicts, and how social capital and local policy are activated in managing NRM conflicts.

2.6 Data Analysis

Data analysis involved appropriate analytical procedures and techniques for qualitative and quantitative data analysis. Qualitative data analysis (Dezin and Lincoln 1994, Krueger 1998, Morgan 1998) emphasized understanding, interpreting and explaining conflicts and meanings that were not measured in terms of frequency and other statistics. In conflict studies, researchers usually collect a lot of information usually presented as narratives, stories or oral testimonies. Narrative analysis was useful to look for patterns or certain regularities that emerge from the numerous stories and observations made during the research process. It identified actions and statements that support the emerging hypotheses, and helped to look for negative or cases or instances that refute the hypothesis to compare positive and negative cases, by checking the range of perspectives, that is, how widely the cases are distributed through a number of different situations. In this report, narratives are included and arranged into clusters or categories of conflict types and provide a descriptive summary of the types of responses, by including illustrative quotes. The selected quotes are intended to help the reader understand the way in which respondents answered questions. Content analysis was most frequently applied in describing the attributes of the conflict, that is, what is the type of conflicts, who was involved, with whom, how, why and with what effect? It helped to identify those ideas, opinions or feelings that repeat, even though they are expressed in different words and styles.

For the survey questionnaire data, we used descriptive, bivariate and multivariate analytical/statistical tools within the statistical package for social sciences (SPSS 11.0) and STATA (version 6.0) econometric computer software. Regression models and other multivariate techniques were used to determine the driving forces of NRM practices, social capital, local policy implementation and natural resources conflicts, and investigate relevant relationships between important variables. Probit and Logit regression models were useful in investigating the factors determining the adoption of NRM technologies, prevalence of conflicts, compliance to byelaws, and certain types and dimensions of social capital. For this purpose, we computed indices of conflicts and social capital which were used as dependent or independent variables as necessary.

3 Rural Livelihoods and Natural Resources Management and Use in the Highlands of Kabale

3.1 Rural Livelihoods in Kabale

In the following sections we describe the research findongs based on the basic concepts of sustainable livelihood framework (see Carney and Farrington 1998) with a gender perspective. The description focuses on the analysis of community and household human, financial, physical and natural assets; livelihood strategies; causes and sources of vulnerability; use and management of natural resources and the institutional and policy framework. Social and natural capitals and policies and institutions are dealt with extensively because they are key areas of investigation in this study.

3.1.1. Human Capital and Household Characteristics

The preliminary results of the 2002 population census put the total population of Kabale District at 461,785 inhabitants with an annual growth rate of 0.9% compared to 3.3% for the country. This figure is well below the estimated 629,400 based on projections from the 1991 census figure of 417,218 (Kabale District, 2002). However, Kabale is one of the most densely populated rural districts in the country, with about 345 inhabitants per square kilometer in several areas. Out migration is common in Kabale and may explain the low population annual growth reported by the preliminary census results. This is, however, not a new phenomenon, as explained by farmers in one of the villages:

> *"(…) By 1941, others were coming and by 1944, all the area was occupied. Since 1944 the population has greatly expanded. Many people have left to buy land in other places. Many have gone to Bunyoro and Toro because of land congestion and shortage of food. Some people fled the border area during the 1994 war in Rwanda. They found land in the areas to which they fled which was more productive than the land left behind, so they sold their land here to those who stayed. All clans and age groups were involved in out migration; even the aged would go. Other neighbouring villages are also suffering from the same problems."*

This reflects a general situation in Kabale district. It is indeed well known in Uganda that the *Bakiga* people (inhabitants of Kabale) have migrated to other areas in search of agricultural land and better livelihood opportunities. The *Bakiga* are also known to be hard working. In some cases, they are so established in the new areas they have formed strong communities and have acquired land and wealth to the extent of accumulating sufficient political capital to be elected as political leaders. There have been cases of conflicts and

violent clashes between the migrant *Bakiga* and local communities in some parts of the country, causing further internal displacement and relocation of several thousands of *Bakiga.*

Table 2: Summary statistics of selected household human capital variables

	Women	Men	All Households
Mean age (Number of years)	38.28 (15.5)	44.92 (15.9)	41.79 (15.6)
Household size (Average number of people currently living in household)	5.19 (2.2)	6.6(3.4)	5.92(2.7)
Mean number of dependant children	2.10 (1.5)	2.05 (1.9)	2.08 (1.7)
Levels of Education			
No formal Education	35.3%	17.6%	26.1%
Primary Education	52.9%	51.4%	52.1%
Secondary school	11.8%	24.3%	18.3%
Post secondary	0.0	6.8%	3.5%
Household Status			
Male Headed one wife	44.3	97.3	
Female Headed households (*De facto*[2] and *de jure*)	52.6	-	
Migration status			
Never lived outside the village	57.1%	53.3%	55.2%
Ever lived in towns, cities or other districts	24.2%	36.0%	29.6%
Lived in other villages in the same district	17.1%	8.0%	12.4%

3.1.2 Household Status and Gender Relations

To further reflect this out-migration, survey results revealed that over half of the households are female-headed (*de jure* and *de facto*[3]). This proportion is considerably higher compared to national averages of 23% (Republic of Uganda 1993). Recent survey results in Kabale also showed increasing number of female headed households (David 2003). This is a clear indication of out-migration and the low growth rate of population reported in the 2002 census. Similarly, close to 30% of households interviewed have some members of their households living outside the village and over 40% of the interviewed farmers have lived outside their villages, in towns and cities as well as in other districts. These findings are consistent with other studies carried out in Kabale District (David 2003, Sanginga *et. al* 2002, AHI 1999), and we therefore believe they are largely representative of the characteristics of the wider population.

The average household size was about 6 persons per household, comprising of 2 dependant children (below productive age). The mean age for farmers is 41 years with slight difference between men and women; men being about 6 years older than women on average. More than 64% of women have attained at least primary school compared to over 80% of men. However, although the proportion of men and women with primary education was comparable, the proportion of men with secondary education doubled that of women.

It is important to note, however, that many aspects of gender roles in agriculture are more complex and variable than is often assumed, including the common assumption that women specialize in food crop production while men concentrate on non-food cash crops. The

[2] This also includes women with absentee husbands, those whose husbands were not permanently living in the village at the time of the survey.
[3] Those include widows and women with absentee husbands

principle of patrilineal descent is dominant in Kabale and permeates practically every institution. It forms the basis not only of the family and the household system, but also of the settlement pattern and land tenure institutions. Although women do not have property rights over land, it is the obligation of husbands to provide the land and to oversee the activities on it. Most productive resources are controlled by men, but women have access and significant decision-making power over the use of agricultural resources. The general perception that men tend to spend most of their time relaxing and drinking with a lot of leisure time, while women are responsible for most of productive activities, has led to interesting discussions on byelaws on food security which has a specific regulation of " men's idleness" meant to force men back into agriculture. A national survey of domestic violence in Uganda reported that the Bakiga are among the ethnic groups where domestic violence, especially spouse beating was rampant (New vision...)

Investigations into gender relations revealed complex intra- and supra household gender dynamics. Women and girls in Kabale, like in most other parts of Uganda provide the bulk of agricultural labour and domestic chores, and perform multiple productive and reproductive roles, but increasingly also community roles. Moreover, a range of socioeconomic variables interacts with gender in complex ways, and characteristics that are often interpreted as related to gender also involve other demographic and household variables. Gender roles have been undergoing considerable change in response to changes in economic conditions, migration, and disease incidence (particularly HIV) among other factors, all of which have necessitated adaptation of traditional gender roles. As we will see later, there are important differences between men and women in the use and management of natural resources, in the dimensions and types of social capital, as well as dimensions and types of conflicts.

3.1.3. Household Productive Assets

Livelihood options for most people are limited to food crops production. Arable land is seriously fragmented on different hills, valley bottoms and wetlands. Most households have plots scattered across and outside the village (about 3 plots, ranging from 0 to 38). In some villages, the number of plots owned by non-residents exceeded those owned by village residents. Table 3 and 4 details household productive assets and household ownership of plots respectively. The average number of plots per household was 6.8 ranging from 0 to 27 plots for women, compared to 9.36 ranging form 0 to 40 for male households. Only four households were reported to be landless, while about 60% of farmers had more than 5 plots of farmland, with close to 10% of male households reporting more than 20 pieces of farm land. Most female-headed households (45%) reported between 2-5 plots. The average size of individual plots varies between 0.1 and 0.7 acres.

Table 3: Household Productive Assets

Assets	Women	Men	All households
Mean number of assets			
Average total number of plots	6.87 (27)*	9.36 (40)	8.16 (40)
Number of plots on hillsides	4.6 (14)	7.6 (38)	6.2 (38)
Number of plots in valley bottoms	1.2 (07)	1.3 (16)	1.2 (16)
Number of plots in other villages	2.6 (16)	2.9 (38)	2.8 (38)
Number of small ruminants per household	1.9 (15)	2.2 (17)	2.1 (17)
Number of poultry per household	3.4 (19)	2.4 (08)	2.9 (19)
Percent of households owning assets			
Percent of households owning more than 5 plots of land	50.7	68.9	60.2
Percentage of households owning small ruminants	49.7	57.5	54.3
Percent of households owning local cattle	7.6	24.6	20.7
Percent of household owning dairy cattle	2.9	4.1	3.5
Percent of households owning bicycle	30.4	37.9	34.3
Percent of households with iron sheet	85.3	93.2	89.4
Percent of households with cemented houses	20.2	15.1	17.6
Percent households owning a radio	63.2	74.3	69.9

*Figures in brackets are maximum

The degree to which fragmentation appears on the landscape is deemed excessive, and has been found to impede incentives for better management of distant plots (Bamwerinde and Place 2000, Raussen *et al.*2002). This highly disjunctive pattern of land ownership also makes collective action on soil conservation and management efforts exceedingly difficult. As we will see later, it is also one of the leading causes of conflicts over the use and management of natural resources.

Table 4: Household ownership of plots in different locations of the watershed

Sub-county	Number of plots on hillsides*	Number of plots in valley bottom	Number of plots outside village	Total number of plots
Rubaya	5.80 (21)	1.56 (11)	3.18 (16)	8.81 (27)
Ikumba	7.15 (30)	.84 (11)	2.38 (11)	8.15 (30)
Bubare	6.19 (38)	1.09 (07)	3.16 (38)	7.74 (40)
Kashambya	5.48 (16)	1.96 (16)	2.42 (16)	7.88 (23)
Total	**6.22 (38)**	**1.30 (16)**	**2.82 (38)**	**8.15 (40)**

* Figures in parentheses are maximum

Most of these plots are privately owned having been inherited from parents. However, there is increasingly a growing market for land. A considerable proportion of farmers have purchased some plots (35.6%) in their villages, or in other villages (43.8) as well as in the valley bottom (43.6). Land transactions are increasingly in form of cash, although different arrangements for renting land with labour, livestock or sharing of harvests still exist in some limited cases. Prices vary according to the size and location of the plot, from approximately Uganda shillings (U.Shs) 1 million for large plots to U.Shs 100,000 – 50,000 for small plots. The prevalent prices for hiring and renting plots vary between U.Shs 100,000 for large plots (approximately 100m2), and 20,000 for small plots (less than 50m2). Communal ownership

of agricultural land is almost non- existent, except for reclaimed swamps, which are managed by the groups, but the plots are allocated to individual members of the society.

Ownership of large livestock is limited to only 20% of households with a local cow. Only a handful of rich farmers, usually living in towns and cities, own improved breeds kept in the valley bottoms. However, the majority of farmers keep small livestock, mainly goats (57% men and 50% women). Housing conditions are generally good, with most farmers living in iron sheets roofed houses, although most are not cemented. About two-thirds of rural households own a radio, suggesting a potential to use radio for disseminating extension messages, byelaws and other policy information for mobilizing and sensitizing people.

3.1.4. Financial Assets and Livelihood Strategies

Most households derive their income from sale of agricultural products. However, non-farm income opportunities are increasingly becoming important. Farmers organizations and groups are increasingly playing a significant role in providing credit to their members in about 36% of villages, while brewing local beer provide household income to more than a third of the households. Hiring out labour for cash did not appear to be an important source of income. Only a negligible proportion of households reported deriving substantial income from hiring their labour out. There are different sorts of arrangements including working parties, rotating labour, payment in kind (food, livestock, land). Remittances from relatives are moderate, and none to negligible for more than two thirds of the villages. Charcoal making and selling of eucalyptus poles and firewood (for local gin factories) are becoming important sources of income in many villages. There are concerns that these activities pose a significant threat in that they may escalate the degradation of natural resources. Some communities have initiated byelaws regulating tree cutting and promoting tree planting or banning charcoal making. The extent to which these byelaws are enforced is discussed in the next chapters.

Table 5: Mean household agricultural income U.Shs by gender and sub-county groups

Gender	Mean	N	Std. Deviation (SD)	Maximum
Female	122350*	66	242794.7	1830000
Male	177632	72	293823.5	1820000
Sub-county				
Rubaya	142031	35	312412.4	1830000
Ikumba	107587	40	89168.7	350000
Bubare	168263	38	325054.6	1820000
Kashambya	201000	26	309106.3	1515000
Total	**150320**	**139**	**270280.4**	**1830000**

*US$ 1= Shs.1800

Although it is always difficult to estimate farmers' income, household interviews indicate that aggregated agricultural incomes range from zero to U.Shs 1,830,000 (Table 5). The mean seasonal income was estimated at U.Shs 122,350 (SD 242,794) for female farmers and U.Shs 177,631 (SD 177,631) for male farmers. Although the mean difference of U.Shs 55,281 is important, the T test results (t=-1.199, p=0.233) show that these mean incomes were comparable between men and women. However, over 50 % of female farmers were found in the lower income categories (Table 6), i.e. less than 25% of the mean income. Similarly, the proportion of households in lower income groups is higher in Rubaya and Bubale compared to Kashambya and Ikumba.

Table 6: Percentage distribution of farm households by income categories by gender and sub-county groups

Income quartiles	Women	Men	All Households	Rubaya/ Bubare	Kashambya /Ikumba
No income reported	10.6	8.3	9.4	9.6	9.1
Low income Category (First quartile)	43.9	37.5	40.6	46.6	34.8
Middle Category (Second Quartile)	25.8	15.3	20.3	20.5	19.7
High Category (Third quartile)	10.6	26.4	18.8	13.7	24.2
Upper Category (Last quartile)	9.1	12.5	10.8	9.6	12.1

The majority of farmers derived their farm income from sale of sorghum (75%), potatoes and beans (50%) (Table 7). However, in terms of amount of income derived from farm products, potatoes were by far the highest income earner, providing an average of U.Shs 35,411 per season. T-test statistics showed that men derived substantially higher income from sorghum compared to women *(mean difference =22,167; t=-2.63, P=0.008),* while no significant difference existed for potatoes and other crops. Other sources of income include tree poles, sweet potatoes, and cabbage as well as tobacco, maize and poultry for a rather small number of households.

Table 7: Percent households deriving income from agricultural products

Main sources of agricultural incomes	Rubaya and Bubale	Kashambya and Ikumba	Female HHs	Male HHs	All households
Sorghum	77.2	72.7	75.7	74.3	75
Potatoes	43.0	57.6	51.4	48.6	50
Beans	40.5	60.6	44.3	54.1	49.3
Trees (poles)	24.4	21.2	21.7	24.3	23.1
Peas	28.9	40.9	27.1	18.9	22.9
Sweet potatoes	24.1	19.7	27.1	16.2	21.5
Cabbage	12.7	15.2	15.7	12.2	13.9
Banana	1.3	21.2	11.4	9.5	10.4
Tobacco	5.1	6.1	4.3	6.8	5.6
Maize	6.3	13.6	8.6	10.8	9.7

Market access for the majority of villages is generally poor (Table 8). Most villages do not have a market within their village (79%). Neither are there market agents or middlemen going to the village in about half of the study villages. Farmers have to walk between 5 to 10 Kms and more to get their produce to markets, often on foot, as there is no public transport in half of the villages. Similarly, the majority of farmers have to walk more or less the same distance to get to the sub-county headquarters, where most markets are located, and where most local government administration and social services (health, schools) are located. This poor access to market and government services certainly has implications both on livelihoods and access to public and/or government administrative and technical services for managing conflicts.

Table 8: Market Access of Study Communities

Selected Characteristics of Communities	Percent of Villages
Distance to sub-county headquarters	
- Within 2 Kms	22.5
- 2-5 Kms	47.9
- >5-10 Kms	19.7
- More than 10 Kms	09.8
Number of trading centres in the communities	
- No trading centre	15.9
- One trading centre	60.9
- More than One trading centre	23.1
Market access	
- No market within village	72.2
- No market within parish	79.2
- No market agents/middle men within village	48.6
Distance to market	
- Within 2 Kms	27.8
- 2-5 Kms	41.2
- >5-10 Kms	23.5
- Above 10 Kms	5.8
Road infrastructures	
- Not accessible by road	4.2
- Extremely bad feeder road	26.4
- Community road	22.2
- Well maintained feeder road	37.5
- Accessible in all whether	9.8
Access to public transport	
- No public transport	50.0
- Once a week	25.0
- Twice a week	5.6
- Regularly	19.4

3.1.5. Sources of Vulnerability and Pathways Out of Poverty

"Poverty will never come out of this village" said a farmer, a reflection of the general attitude across all the villages. There is no doubt that poverty is one of the characteristics of the different villages surveyed and indeed much of rural Africa. A common participatory technique used to examine the sources of vulnerability and the different wealth indicators and to understand in what ways the rich and poor households are different as well as their pathways out of poverty in rural communities is wealth ranking (Gradin 1998), Wealth ranking exercises based on local socially defined well-being categories showed that the majority of farmers were in the average group (53%). Resource-rich (not-so-poor) farmers represented some 18% while the "poor" represented some 26% of households in most communities. The poor were often described as: "One who has no house, no food for children. Children of school going age are not in school, they have "brown hair" (signs of kwashiorkor), and at times infested with jiggers and may steal food. The poor have no food for family, must labour for food. No land to plough, or only a small piece of land around a poor house and no livestock."

To better appreciate the pathways out of poverty, we asked farmers to give examples of people who were originally poor, but who have managed to "jump" out of poverty. The following cases illustrate some strategies farmers have used to escape from extreme poverty.

- *Some very poor people squeezed themselves to work hard in order to educate their sons, so that they can get a job and be able to transfer money back home and take care of their parents. Those who were lucky made it and now have good jobs in Kampala or abroad and have built good houses for their parents. They are sending money to their families. Most elderly people with good housing receive support from their children.*
- *Some people are poor because of excessive drinking. Those who decided to stop drinking and start brewing beer to generate cash can now buy good land where they can produce potatoes and sorghum, and make good money.*
- *Some farmers have joined a group to work together and save money. With their savings and credit from the group, they can start a small business or invest their money in purchasing good land. There are now many local credit groups that one can join.*
- *There are cases of poor families that used to work for food and clothing. After some time, they acquired land to grow crops of their own. In some cases, they were given small livestock after some time.*
- *Many people are forced to migrate to other districts or to go and work in tea estates to earn a living. Many of them have made it and are sending some money to their families. Some left the village and returned to start new businesses such as making "enguli"*

In addition to these contextual and structural factors, other factors include: fragmentation and low productivity of land, lack of market for crops, low prices for agricultural products, lack of rural infrastructure, individual behaviour such as drunkenness and laziness, as well as social and family circumstances such as being a widow or separated from husband or orphaned at an early age.

3.2 Natural Resources Management and Use in the Highlands of Kabale

3.2.1 Status of Natural Resources in Kabale

Several scholars have extensively documented the status of natural resource management in the highlands of Kabale. AHI has compiled a bibliography of major literature on NRM in Kabale. Similarly, extensive documentation of land degradation and technologies to reverse it can be found in the different reports and publications of several NGOs in Kabale. More recently, Raussen *et al.* (2002), in their inventory of technologies to improve NRM and agricultural production in western Uganda, reported that soil erosion and flooding, low levels of use of improved production technology, land fragmentation, low and fluctuating market prices, poor market access, inputs unavailability and depleted soils are the key elements leading to low soil productivity.

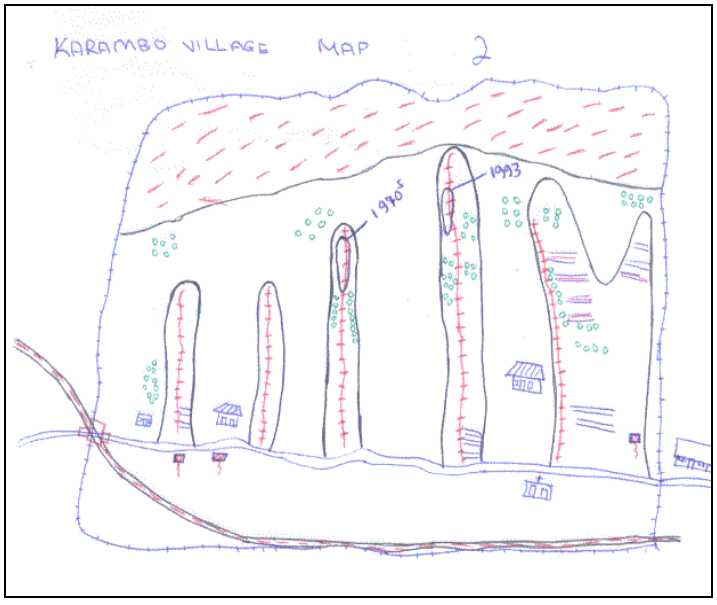
The status of agricultural-based natural resources in the highlands of Kabale cannot be better summarized than this explanation by an elderly farmer Zaburooni (now in his late 70s) who came to the village in 1944 when he was about 18 years old.

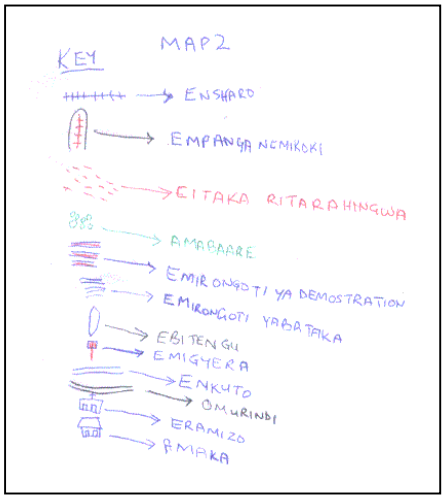
> *(…) This area was not occupied before the 1940s.The first people settled on the hilltops as there were forests and jungles lower down. There were about seven families present at that time. They built houses on the top and cultivated around the houses. ….When more people came to the area, the clan leaders would allocate enough land that could support a family, depending on the family size. They did not think about the future or acquire huge chunks of land ready for expansion. … In the past you could stand on a hilltop and only see another hill top because of the dense and tall*

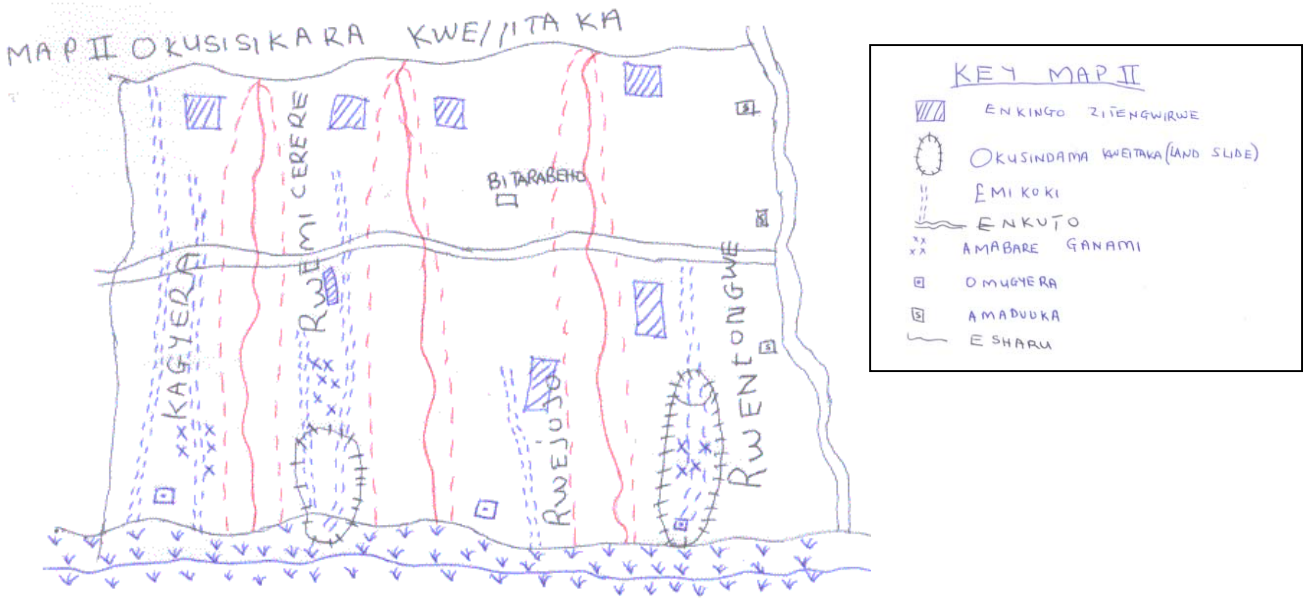
bushes in the valley. Everything was trees, all the valleys and slopes were also covered with forest. Cultivation started at the mid slopes, moving down to the lower slopes, in order to scare away predators (wild pigs, leopards and lions) and lions. Houses (huts) were built on cleared areas on hillsides, but these were vulnerable to animal attack. These huts were called "Kyamutwarabwasesire" (meaning "the lion has taken him in open daylight!") (...). The east-facing slope was the first to be cultivated, starting from the mid slope to the valley, then expanding south on the eastern slope. (…)The soils used to be very fertile and very dark. Now they are brownish, and yield less well. ….We used to plant plots in alternate years (3 years) to regain its fertility. . When you leave a plot to rest, grasses grow up and later rot and the soil gains. Constant tilling of land from season to season without resting is the reason of this low productivity. On this plot near the homestead, I used to produce 3 sacks of beans, now the same plot produces less than half a bag (30 Kgs). We used to plant peas on the hilltop and also potatoes and beans. These areas are now abandoned (…)

Results of individual interviews, focus group discussion, participatory mapping, land degradation assessment and field observations lend strong evidence to acute land degradation, erosion, and declining soil productivity in Kabale. Based on farmer's rough estimation, less than 30% of the cultivable land in their villages is still arable, as the other 70% has been degraded. However, most of the degraded land is still being cultivated, and only about 20% has been abandoned. This trend is confirmed by (Bamwerinde and Place 2002) who assessed the extent of land abandonment in the Kigezi highlands.

Figure 2: Farmers maps showing hot spots of land degradation in the Buramba-Mugandu watershed







The types of erosion that farmers described to be evident in the study villages are gully erosion, sheet erosion, and rills (Figure 2). Gullies, "Emikoki", are evident and are more pronounced on the mid-slopes at times stretching from the top to the bottom of the hills as well as in the valley bottoms. The 'massive' water runoff that passes through these gullies during the rainy season tends to collapse the conservation structures that the farmers have attempted to put in place like bunds and terraces. A recent study on field assessment of land degradation (Mbabazi et al. 2003) estimated that between 3 and 21 t/ha of soils are lost to these different types of erosion.

Among the problems affecting poor soil productivity, the majority of farmers reported soil erosion causing gullies and destroying soil conservation structures such as terraces, and causing flooding in the valley bottoms. However, some areas have been badly affected by erosion, landslides and flooding than others.

3.2.2 Adoption and Use of Soil Conservation and soil fertility improvement Practices

There are several soil conservation and soil fertility improvement practices that farmers can use to combat land degradation and restore soil fertility. However, their levels and intensity of use are variable. We assessed the use status of different technologies by farmers. Results (Table 9) show that the most common soil fertility improving practices regularly used by farmers are the traditional practices such as seasonal crop rotation, usually sorghum-bean-potatoes (practiced by 67.5% of the farmers) and short fallow (practiced by 33.3% of the farmers). Similarly, over half of farm households reported using farmyard manure to improve soil fertility. However, the use of farmyard manure is generally confined to home garden plots and those located on gentle slopes where the surface run-off is very minimal. Studies (Muzira *et al.* 2003) have also shown that the quantity and quality of farmyard manure are not adequate for effective restoration of soil fertility. Over a third of the households reported lack of manure as a constraint to restoring soil fertility. Only one out of five households regularly use crop residues and organic matter for restoring soil fertility. About 70% of households never use crop residues systematically for improving soil fertility. In addition to production of limited biomass, there is competition between use of crop residues such as sorghum or bean stems for soil conservation and other domestic needs like

fuel woods, livestock and construction materials as well as other domestic needs. As reported by other studies in Uganda (Nkonya 2001), there is virtually no use of inorganic fertilizer by Ugandan small-scale farmers. We found that only a handful of farmers are actually using inorganic fertilizer, generally on the highly profitable potatoe seed production. As market opportunities for the crop increase, more farmers are likely to invest in purchasing fertilizer to increase productivity and become more competitive.

Although farmers reported awareness of agroforestry technologies for improving soil fertility and combating soil erosion, as well as other multiple benefits of agroforestry, the actual use of such technologies is still limited to about 25% of farmers. Among the constraints for this limited use of agroforestry, land fragmentation, small land size and lack of planting materials were the most common. However, it is important to note that use of agroforestry was higher in Bubale sub-county, reflecting significant progress in the dissemination of agroforestry technologies by AFRENA and its partner NGOs.

Table 9: Soil fertility improving practices used by farm households

Soil fertility management practices	Female (%)	Male (%)	All households (%)
Crop rotation			
Never	29.0	21.6	25.2
Rarely	5.8	2.7	4.2
Regularly	62.3	74.3	67.5
Crop residues			
Never	72.5	66.7	69.4
Rarely	9.7	18.6	17.7
Regularly	18.8	26.7	22.9
Farm Yard manure			
Never	37.7	33.3	35.4
Rarely	7.2	12.0	9.7
Regularly	52.2	53.3	52.8
Inorganic fertilizer			
Never	91.4	93.3	92.4
Rarely	1.4	2.6	2.1
Regularly	4.3	4.0	4.1
Agroforestry for fertility improvement			
Never	82.9	68.0	75.2
Rarely	5.7	9.3	7.6
Regularly	11.4	22.6	18.3
Fallowing			
Never	67.1	54.1	60.4
Rarely	5.7	6.8	6.3
Regularly	27.1	39.3	33.3

The most common soil conservation methods practiced include constructing terraces, digging trenches, planting trees, planting agro-forestry trees, planting elephant grass and short fallowing (Table 10). Terracing is a distinguishing characteristic of the Kigezi highlands. This practice was introduced by the colonial administration in the 1940s-1950s and since then farmers have cultivated their land using terraces. The study found that over 40% of farm households have established several new terraces over the recent past. Conversely, 43.3% of households have experienced collapsing terraces due to soil erosion, or destruction by neighbours due to boundary conflicts. In general, when the terrace bund increases in height, farmers may decide to reduce or break the old bund and construct new

ones. We found however, that this practice is one of the major causes of conflict between neighbours. In some communities, specific byelaws have been formulated to regulate construction and maintenance of terrace bunds.

Farmers are increasingly using trenches to combat erosion. However, most trenches are not protected by grass strips or trash lines and as a consequence fill up quite easily. Use of trash lines is often visible immediately after sorghum harvest albeit with competition with other uses as cited earlier. Similarly, mulching is constrained by lack of biomass and competition by other uses.

Table 10: Use of soil conservation measures by farm households (percent of farmers)

Soil Conservation Measures	(Percent of farmers)		
	Women	**Men**	**All households**
Construction of new terraces	38.6	45.3	42.1
Digging of trenches	32.9	38.7	35.9
Natural fallow	31.4	34.7	33.1
Agroforestry technologies	25.7	30.7	28.3
Fallowing with trees	20.0	32.0	26.2
Mulching	14.3	21.3	17.9
Planting grass strips	8.6	9.3	9.0
Use of trash lines	5.7	6.7	6.2

In general, the adoption behavior of both male and female farmers was comparable, although the proportion of men using agroforestry technologies and technologies requiring high labour and capital inputs is much higher. Although much of the soil conservation practices are based on technologies that have been available for more than 30 years, many farmers are increasingly using agro-forestry trees for controlling erosion, improving soil fertility, livestock feed, fuel wood, production of staking materials for climbing beans and tomatoes as well as poles for sale. Results also indicate a clear willingness to use and purchase agroforestry technologies and other improved technologies. There were significant differences between men and women in the average number of NRM technologies purchased by farmers. On average, men purchased more than 3 technologies compared to less than two for women (mean difference= 1.07; t=1.8 significant at 1%). However, there was no significant difference in their willingness

3.2.3 Determinants of Adoption of Soil Conservation Technologies

The study examined the factors affecting farmers' adoption and use status of soil conservation measures using Probit regression models. Adoption was defined as the use status (currently using) of a specific practice with the intention of combating soil degradation. Table 11 shows the results of the probability of using agroforestry technologies, mulching and making new terrace bunds to control erosion and improve soil fertility.

Table 11: Determinants of use of soil conservation technologies by farmers' households

	Agroforestry	Mulching	Making new terrace bunds
Gender (1=men)	2.847***	0.051	1.484**
Age	-0.027	-0.01	0.003
Education level	-1.008	0.096	0.409
Farm income	3.36e-06*	1.506-06	2.19e-06
Number of plots	-0.059	-0.103**	-0.0883*
Number of livestock owned	0.070	0.0703	0.177**
Number of adult males	0.016	0.761	0.235
Subcounty location	-0.041	0.679*	-1.203**
Collective action	0.191***	0.07**	0.228***
Bonding social capital	1.075	0.602	1.756**
Cognitive social capital index	-0.126*	-0.086**	-0.194***
Linking social capital	0.088	-1.081*	-0.939
Structural social capital	-1.577*	-0.103	-2.632***
Tree conflicts	-1.956***	-0.118	0.304
Boundary conflicts	1.353**	-0.062	-0.028
Constant	0.0683	-0.990	

*Significant at 10%; ** Significant at 5%; *** Significant at 1%.

Factors that were positively and significantly influencing the use and adoption of agroforestry technologies included gender (for example men had higher probability of practicing agroforestry than women), income levels, extent of collective action, and boundary conflicts. In general male farmers had a higher probability of using soil conservation measures than women. This can be explained by a number of factors, including the patrilineal land tenure system (men own and control land resources) and the fact that most of these conservation measures require high physical labour. Traditionally, men are responsible for making the conservation structures, while women are responsible for producing and managing the farm.

The effects of boundary conflicts were generally not significant, except for agroforestry technologies. Farmers who reported boundary conflicts were more likely to adopt agroforestry technologies to demarcate their land. However, there was a significant inverse relationship between tree conflicts and agroforetry technologies. Understandably, this type of conflicts discouraged farmers to plant trees on their farm. The effects of social capital variables show mixed results. While bonding social capital as measured by the extent of collective action was positively and significantly related to the adoption of agroforestry, mulching and terracing technologies, the effects of structural and cognitive dimensions of social capital were generally negative. The probability of adopting soil conservation measures decreased significantly with the number of plots. The more plots farmers have, the less likely they will use soil conservation measures.

Other traditional socioeconomic variables used in adoption studies (age, education, labour availability were generally not significantly, though age was inversely (negative) related to both agroforestry and mulching while education level was related to agroforestry technology.

3.3 Diagnosis and Assessment of Social Capital

A key objective of this study was to contribute to the literature on empirical assessment and measurement of different levels and dimensions of social capital. In this section, we describe

results of empirical assessment of the various dimensions of social capital (bonding, bridging, structural and cognitive) both at the community and individual household levels

3.3.1 Bonding Social Capital

The basic social organisation of the *Bakiga* people of Kabale utilizes the agnatic lineage structure based on principle of patrilineal descent, which forms the core of social organization and permeates practically every aspect of life. The clan is an exogamous patrilocal unit. Clan identity is transmitted through the father, but women keep their own clans. Sons can marry from their mothers' clan, but a daughter cannot marry into her mothers' clan. Relationships between clansmen cut across neighbourhoods. Neighbours may be from the same clan or mixed. There are several clans in each village, although two or three may be dominant. For example, in Karambo village, there are two dominant clans - *Abagyeri* and *Abarihira*, and four minor clans - *Abaheesi, Abanyangabo, Abasigi* and *Abakongoro.* In Habugarama, the main clans are *Abagara, Abasigi, Omwinika, Abanyangabo, Abarihira* and *Abakongoro.* In Kagyera, clans in order of size are the *Abayondo, Abagunga, Abakongwe, Abaheesi,* and *Abasigi.*

The responsibilities of a clan member are to help in emergencies, sickness, assist at burials and resolve conflicts and disputes between clan members. Clans play an important role as an important feature of social organization that facilitates coordination, cooperation and managing the social structures that are required to resolve conflicts. Clans form the basis of social networks, thrust and social norms of reciprocity and cooperation that facilitates bonding social capital. As we will see in the following sections, clan elders and members constitute the basis that facilitates traditional or customary conflict resolution mechanisms. Historically, conflicts at the local level were often dealt with through customary and traditional dispute resolution mechanisms. With the penetration of the state, urbanization, population pressure and market economy, other mechanisms for facilitation of collective action and resolving conflicts are emerging. These include formation of informal and formal social organizations.

There are several local social organizations in all the communities surveyed. One of the most common is the *Engozi*, a local village organisation that helps in emergencies, transporting the sick, and assist in organizing burials as well as other self help activities. The Engozi or stretcher group is present in virtually all villages. Its membership is open to all village residents. There are also other local organizations and informal groups such as women's labour exchange groups, drumming and singing groups, various savings and credit groups, etc with different history and structure.

Interviews with key informants revealed that formal local organisations started from 1965 onwards. One of the oldest is Rubaya Growers Association dealing in vegetable produce. The Kihira-Buramba group – growing potatoes started as early as 1968, and the Muganda-Buramba cooperative society for managing the swamps was formed in the early 1980s.

> *"The longest standing group in this village is the "Engozi" which is for raising money and resources for funeral rites. Around 1995 a village group started with about 25 members with the objective of addressing poverty. Membership was open but not everybody came. The group started as a labour group, working for members and also for others to generate income. It was also a saving and credit group to members. It expanded to 39 when this NGO came to the village to address soil fertility issues and experiments on different crops. Currently there are 2 groups with similar membership; the group that developed when the first NGO came to the village, dealing with soil issues (1999) and a*

larger group of 48 members which formed in 2001 when another NGO came and wanted to work with a bigger group on marketing issues…"

Recent inventories of farmers' groups commissioned by the national agricultural advisory and development services (NAADS) identified over 500 groups in Rubaya sub-county and over 460 groups in Bubale sub-county (Opondo 2002, Siriri 2002). In some parishes, one can find over 70 agricultural-based groups with overlapping membership. There have been concerns that many of these groups were newly formed in response to NAADS's strategy of reaching farmers through registered groups. As a consequence, a lot more new groups emerged, with overlapping membership to seize the new opportunities. Many of these groups disappeared as soon as NAADS interventions took time to materialize as expected.

Table 12: Number of farmers' groups in Rubaya sub-county.

Parish	Number of groups	Number of registered groups	Number of farmers in groups
Buramba	63	41	1437
Mugandu	54	18	1457
Karujanga	70	34	2408
Kibuga	71	42	1102
Kahungye	50	40	480
Bigaaga	50	40	796
Rwanyana	84	46	2006
Kitooma	65	43	928
Total	**507**	**304**	**10614**

Source: Opondo, 2002

The higher density of local organizations may suggest a relatively high level of social capital and associational life. However, studies of group dynamics have shown that groups have different levels of maturity and social capital (Sanginga *et al.*2001), and generally experience different cycles in the group development process.

3.3.2 Membership in Groups and Social Organizations

One important indicator of social capital is diversity of membership in community groups and local organizations. We found that a considerable proportion of farmers belong to several groups. For example, in Habugarama village alone, we identified about 10 local groups and organizations comprising labour parties, credit and savings groups, pig rearing, farming groups, swamp association, "Determined women", drumming and singing groups. There are also others, including church-based groups, heifer group, mothers' union, and another for non-legally wedded women. Betty is a member of all these groups, and occupies various positions in different groups: vice-chairperson, secretary, treasurer and committee member. Similarly, Mr. Bitarabyo Fred is the chairman of the Mugandu/Buramba society. He is also a member of the Uganda seed potatoe producers association, chairman of Rukore primary school parents and teachers association (PTA) and chairman of Barisa-Bahinge (livestock keepers and soil conservation), while Mr. Kabarebe James is the chairman of Kihira group, Nyamabale Farmer field school and a signatory to the 25% of taxes returned to the village. Both are in a group organised for funeral rites. Fred is treasurer, James is Chairman. About 40% of households interviewed are members of executive committees in different groups, and expectedly with about twice as much more men than women.

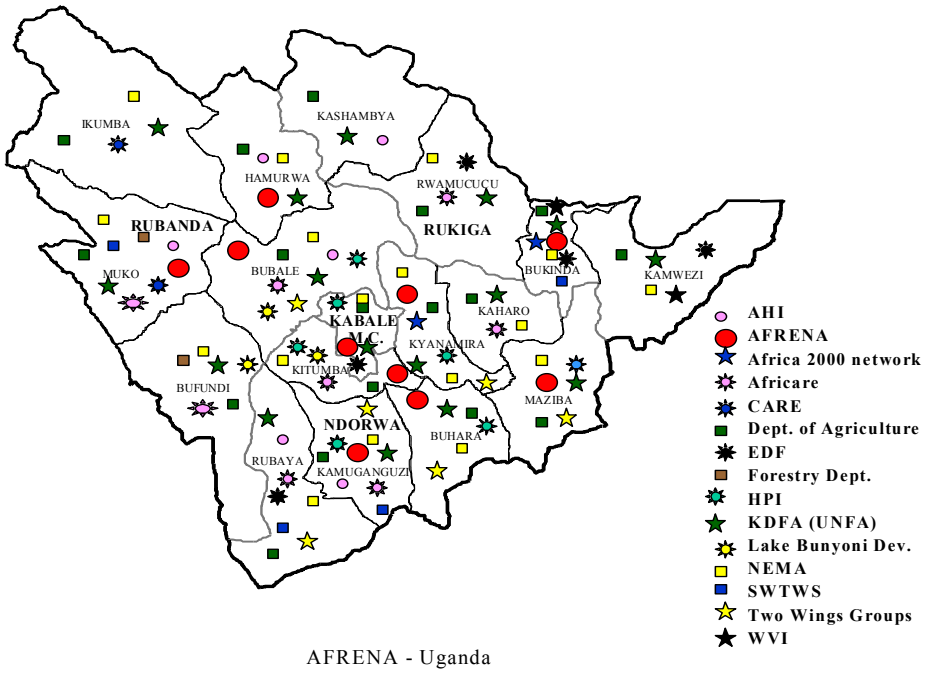
Over 70% of groups are mixed with both male and female membership. There are also exclusively women's groups, sometimes with one or two men who act as public relations officials, sponsors or advisers. Few men-only groups were found in Ikumba for bee keeping. Sanginga *et al.* (2001) analysed the type and trend of participation in farmer research groups in Kabale, and found interesting gender dynamics in the life cycle of groups with women progressively forming the majority of membership in farmer research groups, while the proportion of male drop-outs becomes considerable as the groups move from forming to the storming and norming stages (Sanginga *et al.* 2002).

Although groups and social organizations were equally present in all the four sub-counties, we found that these were notably many groups and social organizations in Rubaya and Bubare compared to Kashambya and Ikumba. In the former sub-counties, 74.5% of households belonged to groups and social organizations specifically concerned with natural resources management, compared to 56% in the later sub-counties. In the same vein, more households (84%) in Rubaya-Bubale participated in extension and dissemination activities in relation to NRM compared to Kashambya-Ikumba (74.5). However, in Ikumba equally a higher number of households were involved in NRM activities by external organizations such as CARE Development Through Conservation (Care DTC) project.

3.3.3 Bridging and Linking Social Capital

The presence of external organizations is an important aspect of bridging social capital. Communities can also be characterised by their extent of bridging social capital, i.e. the horizontal and vertical relations between organizations, institutions and communities and links with external and formal organizations. A common participatory tool used for investigating vertical and horizontal linkages between local organizations or groups with other organizations and external institutions is the Venn diagramme. Venn diagrammes constructed by farmers indeed show that many villages are well endowed in bridging and linking social capital and have intensive links with external organizations, mostly NGOs. Kabale is perhaps one of the districts where there is a concentration of NGOs and research organizations working in NRM issues (Figure 3). Community survey results however showed that villages in Ikumba appeared to be well covered by external organizations (94%) followed by Rubaya (81%) and Bubare (57%). The high concentration of development organizations in Ikumba may be related to increasing concerns of environment conservation and protection of natural parks and forest reserves. Conversely, Kashambya had less NGOs coverage, with more than half not having any link with NRM organizations. This proliferation of NGOs and unequal coverage of the district have been objects of policy discussions in policy stakeholders workshops organized by AHI and other partners (Sanginga 2002). There have been attempts to coordinate and harmonize NGOs activities and to integrate these into the sub-county and district development plans.

Figure 3: NRM organisations in Kabale



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3.3.4 Resources Sharing and Collective Action

Collective action is a strong indicator of social capital. It translates thrust, cooperation and participation in community activities in more tangible outcomes: coordination and cooperation that enable people to act collectively for mutual beneficial collective action around areas of common need (Uphoff and Mijayaratna 2000). The most common form of collective action found in virtually all the villages was the community work "Burungi bwansi", and the "Engozi". Collective action related to agricultural and NRM tended to be limited to members of active groups only. This included rotating exchange labour or group labour for a number of farm operations such as planting, weeding, harvesting, etc. Only one out of four farm households reported active participation in organizing collective action to improve the management of natural resources in their communities for the benefits of others.

Majority of households (83.6%) are increasingly sharing assets and resources within their communities. Table 13 shows the main resources being shared within the four sub-counties. The resources commonly shared by the majority of farm households are labour (50%) and agricultural tools (50.7%) as well as money (47.6%) Sharing of land (both farmland and grazing land) and labour is more common in Ikumba than anywhere else, while wetlands seem to be more a common pool resource in Kashambya. There are complex arrangements, obligations and rights for resources sharing. In some communities, specific byelaws have been formulated, while in others conflicts resulting for the management of common pool resources are intensifying.

Table 13: Resources sharing issues in the study communities

Resources sharing	Rubaya (%)	Ikumba (%)	Bubale (%)	Kashambya (%)	Total (%)
Agricultural tools	48.6	57.5	47.6	48.1	50.7
Labour	48.6	65.0	40.5	44.4	50.0
Money	47.2	50.0	50.0	40.7	47.6
Grazing land	10.8	37.5	23.8	29.6	25.3
Farmland	27.0	42.5	26.2	25.9	30.8
Seeds	13.5	25.0	9.5	25.9	17.8
Swamps/wetlands	16.2	12.5	2.4	22.2	12.3
Woodlots	8.1	15.0	14.3	14.8	13.0
Trees	5.4	10.3	11.9	14.8	10.3
Crops	16.2	15.0	4.8	7.4	11.0
Livestock	5.4	12.5	4.8	3.7	6.8

Different people and stakeholders are involved in sharing resources. Analysis showed that resources are generally shared with group members (66.1%), neighbours and friends (52%) as well as relatives (41%) and other community members (38.3%), with a combination of the above depending on the type of resources. In many cases, neighbours are also relatives and friends, and also may belong to the same groups.

The most common form of collective action in NRM was "*burungi bwansi*", or community collective work reported in 72% of villages. The level of participation in collective action was generally high, except in Ikumba where only 66% of farmers thought it was regular. Other forms of collective action included: tree planting, controlling bush fire, controlling flooding and making soil conservation structures. Collective action on agricultural activities for the benefits of individuals was restricted to group members only (22%). To further assess the level of cooperation and collective action in the village, we asked: "When you have a lot of work on your farm, how do you access additional labour?" In general, most people rely on hiring casual labourers or on rotating exchange group labour for group members, particularly in women's groups.

In terms of institutional efficiency, the majority of farmers reported that the local council system, (LC1) is very effective and useful at the village level. About one third found it useful, but with some levels of corruption. The majority of male farmers (53%) have been members of the LC1 executive or have some members of their households in the LC system. However, the findings also show that only one third of the village members have participated in discussing and making rules about proper management of natural resources.

3.3.5 Cognitive Social Capital

To further assess the levels of social capital (relations of trust, cooperation that allow people to act collectively or to participate in mutually beneficial collective action), the survey asked respondents how they would assess their communities on the different structural and cognitive dimensions of social capital.

Table 14: Cognitive dimensions of social capital

Structural and cognitive dimensions of social capital	Community perceptions		Individual perceptions	
	Rubaya-	Ikumba-	Women	Men

	Bubale (%)	Kashambya (%)	(%)	(%)
1. Cooperation among people	42.0	40.0	47.1	48.0
2. Participation in community activities	63.8	70.8	47.8	44.6
3. Extent of trust among people	31.9	40.0	32.9	22.7
4. Unity among people	38.3	44.0	20.6	17.3
5. Extent of giving or exchanging gifts	6.4	8.0	37.1	38.7
6. Extent of financial contributions for Community activities	29.8	24.0	45.7	48.0
8. Extent of conflicts or disputes among people	6.4	8.0	20	17.3
9. Extent of individualism and selfishness	4.3	24.0	27.1	13.5
10. Extent of divisions in the community	14.9	16.0	34.4	38.5
11. The community is okay	46.8	48.0	38.8	40

Table 14 compares results of community group discussions and individual male and female farmers. Results of community surveys show significant differences in certain dimensions of social capital between the two groups of sub-counties. Participation in community activities, extent of thrust among people, unity among people, and the extent of individualism and selfishness were considerably high in Kashambya and Ikumba compared to Rubaya and Bubale. These findings corroborate earlier findings on extent of collective action and resources sharing which were more common in the former sub-counties. However, generally, both communities were found to have average levels of social capital as indicated by the general perceptions of communities (46% and 48%). There were no important gender differences in individual perceptions of cognitive dimensions of social capital as both men and men reported moderate to high levels of social capital in their respective communities, except for two items: the extent of thrust among people, and the extent of individualism and selfishness.

3.4 Byelaws for Natural Resources Management

3.4.1 Historical Background

The history of soil and water conservation policy highlights several issues relating to the policy formulation process. The management of natural resources (soil, water and vegetation) was done on the basis of numerous laws and regulations. The laws could be so scattered that their implementation resulted in pitched conflicts between government departments, the similarity of basic principles, interests and goals notwithstanding, which in turn undermined their effectiveness on the ground (Kamugisha, 1993 and Barlow, *et al*., 2000). Before independence, the British colonial administration issued byelaws to reverse soil erosion and land degradation caused by cultivation and livestock rearing. Byelaws were formulated in accordance with the District Councils' Ordinance N°-1 of 1955. The British colonial authority ensured strict supervision and widespread implementation of the soil and water conservation policy as it was considered important for production of raw materials for British industries and sustaining food production. Strict enforcement started weakening after independence and almost collapsed with successive regimes (Egulu and Ebanyat, 2000). The byelaws were implemented by local chiefs and government officials who imposed stiff penalties on farmers who failed to comply (Walaga *et al*., 2000). So when there was less or no enforcement, the soil conservation policy was abandoned.

During the post-1986 phase, under the National Resistance Movement (NRM) leadership, policy changes in natural resources management started with the creation of Ministry of Environment protection, which was later restructured to form the bigger Ministry of Natural Resources. Various policies were initiated and several policy changes in agriculture and natural resource management were made.

3.4.2 Decentralized Structures in Uganda: Levels and Main Functions

Decentralisation in Uganda is probably one of the most ambitious and far-reaching reforms of local government reform undertaken in sub-Saharan Africa. The decentralization process was initiated in 1986 and culminated in the 1997 Local Government Act, which provides the legal framework of an ambitious and far-reaching decentralisation program. Government functions were strengthened at lower administrative levels, with fiscal, legislative and administrative power, giving greater control to local councils at the district, sub-county and lower levels. The role of Central Government is primarily to provide policy guidelines and standards and carry out monitoring and evaluation. The functions and services regarding land use, management and administration are the responsibility of local government.

The District can devolve to the sub-county and lower level councils some functions for managing natural resources, such as:

- providing agricultural ancillary services like extension
- controlling soil erosion and protecting wetlands
- taking measures to prohibit, restrict, prevent and regulate or abate destruction of grass and forests by bush fires, including the requisition of able-bodied males to extinguish such fires, cut-fire breaks and generally protect the local environment
- providing measures to prevent and contain food shortages, including relief work, provision of seeds and storage of food stuffs

At the base of the local government structure, the LC1 (village councils) consist of all adults residing in a particular village. The village community elects a nine-member village executive committee. Beyond the village, in ascending geographical size, there are parishes (LC2), sub-county or *gombolola* (LC3), county and district (LC5) councils. The district (LC5) is the highest level of local government and links with central government. At the district level, LC5s are expected to pass annual estimated budgets and rolling plans and make byelaws applicable to the whole district.

Table 15: Decentralised structures in Uganda: Levels and main functions

Local Council Level	Composition	Functions
LC1: Village (composed of more or less 50 households)	- 9 members - At least 4 women	- Assist in maintaining law, order and security - Initiate, support and participate in self help projects - Recommend persons for local defence units - Serves as communication channels with government services - Monitor the administration of projects - Impose service fees - Collect taxes - Resolve problems and disputes - Make byelaws
LC2: Parish (composed of 3 - 10 villages)	- Depending on the number of villages	- Assist in maintaining law, order and security - Serves as communication channel with

	- Elected from the village councils - At least 4 women	government services - Initiate, support and participate in self help projects - Monitor the administration of projects - Resolve problems and disputes
LC3: Sub-county (Composed of 2 - 10 parishes)	- Depending on the number of parishes - 1/3 women - 2 youth - 2 persons with disabilities - Elected councilors from parishes	- Local governance - Enact byelaws - Approve sub-county budget - Levy, charge, and collect fees and taxes - Monitor performance of government employees - Formulate, approve and execute sub-county budgets - Resolve problems and disputes
LC4: County (composed of 3 - 5 sub-counties)	- 5 members - Chairpersons or vice-chairpersons from each sub-county	- Advise district officers and area Members of Parliament (MPs) - Resolve problems and disputes - Monitor delivery of services
LC5: District (composed of 3 - 5 counties)	- 36 members - 12 women councilors - 2 youth - 2 people with disabilities - 19 elected councilors	- Exercise all political and executive powers - Provide services - Ensure implementation of government policies and compliance with it - Plan for the District - Enact district laws and ordinances - Monitor performance of government policies - Levy, charge and collect fees and taxes - Formulate, approve and execute district budgets

Source: Adapted from Raussen 2000

The sub-county level (LC3) is the basic unit of local government, both political and administrative. These changes have brought some impressive results, creating a fundamentally different environment for an open and participatory policy and decision-making at the lower councils. The provision of local government elections guarantee widespread representation at the various councils and include quotas by gender, people with disabilities and youths. For example, at least one-third of the council members must be women.

However, in their analysis of decentralization's dual nature in Uganda, James et al. (2001) found that on the surface, the mechanisms of decentralization are established and functioning, with the structure of a five-tier system of local councils and committees, deconcentrated staff, a bottom-up planning process, and powers to collect and disburse local revenue. However, there are some problems in the implementation of the decentralisation policy. The inadequacy of resources, inadequate trained personnel and human capital, revenue collection and use, accountability of funds, weak institutions, and misconception of policy are some of the most common problems (Kabale District 2002). Decentralization in Uganda is still a relatively young process, and does not yet constitute a genuinely participatory system of local governance (James et al.. 2001). It is important to note that the process is still being refined and strengthened.

3.4.3 Natural Resources Management Policies

The Constitution of Uganda (1995), National Environment Statute (1995) and the Local Government Act (1997) express the right of the public to participate in environmental management. This guarantees a process of consultation at district, local councils and communities before any plan or policy can be adopted by cabinet. In the context of decentralised environmental management, the district environment committee is mandated to ensure free and open participation of the community in its deliberations and in the formulation of byelaws (NEMA, 2001). The overall goal of the National Environment policy (1995) is to promote sustainable social and economic development which enhances or maintains environmental quality and resource productivity on long term basis.

Furthermore, the policy seeks to meet the following objectives:

- To enhance the health and quality of life of all people in Uganda and promote long term sustainable socio-economic development through sound environmental and natural resource management and use
- To integrate environmental concerns in all development policies and activities at national, district and local levels with full participation of the people
- To conserve, preserve and restore ecosystems and maintain ecological processes and life support systems
- To raise public awareness and ensure individual and community participation in activities that improve the environment

The following initiatives have been instituted to enhance the plan for modernization of agriculture (PMA):

- Government has developed a land sector strategic plan as a framework for improved management and use of land resources in Uganda. Land tribunals and district land boards have been created for increasing security of land tenure as an integral component of the PMA.
- The National Environmental Management Authority (NEMA) supports district environmental action plans and sectoral guidelines on environmental impact assessment. Management of wetlands was decentralised thus allowing action planning at district and community levels which then would build into a national inventory on wetlands.
- A National Soils Policy for Uganda is being prepared in order to streamline soil management methods and to improve and maintain soil quality and productivity on a sustainable basis (NEMA, 2001).

The 1995 NEMA Statute establishes district environment committees supposed to co-ordinate the work of district local councils on environment as well as ensuring that environmental concerns are integrated in district planning. The Local Government Act and the National Environment Statute give authority to the districts to enact ordinances and to make byelaws related to environmental management. The present process of passing local bills into ordinances and byelaws by the district, urban, sub-county, municipal division or village council into byelaws and regulations according to Sect. 39 to 44 of Local Government Act (1997) has the following steps (Box 1):

The policy also set the agenda for decentralised environmental governance in Uganda allowing the formulation of district environment management policies that are specifically focused on local concerns. At the district level, there have been environmental action plans at different

levels, but initiatives to enact a district environmental act are recent. Under decentralisation, many local governments are involved in reviewing existing byelaws and formulating new ones. However, there is no systematic information that provides policy makers and other stakeholders with clear guidance on people's awareness, implementation and assessment of the effectiveness of existing byelaws; constraints in their implementation and their outcomes, and strategies for making existing byelaws more effective. In many cases, byelaws and policies are designed on the basis of inadequate empirical understanding or weak empirical evidence. The need for more empirical information about the awareness and effectiveness of current byelaws and other local policies, and the problems or constraints for their implementation and opportunities for improving their implementation was evident in the various policy stakeholder workshops. The effectiveness and the implications of the byelaws in managing conflicts are discussed in the next sections.

3.4.4 Byelaws in Agriculture and Natural Resources management

There are six general byelaws in agriculture and natural resource management in the areas of i) soil and water conservation, ii) food security, iii) tree planting, iv) bush burning, v) controlled grazing, and vi) swamp reclamation. Each of these byelaws has specific regulations and enforcement mechanisms (Annex). For example, the soil and water conservation and the tree planting byelaws have the following regulations:

Box 1: Steps in formulating byelaws in local government structure

- Any community can initiate the process of formulating a byelaw or their councillor can draft a bill seeking to formulate a byelaw
- The draft bill is introduced to Council by one councillor
- Bill is then published and distributed to all councillors by clerk to council
- Bill can then be debated and approved within 14 days after publication (if there is no emergency)
- For municipal/division council, sub-county council or village council, if passed, the bill is forwarded to the relevant higher council for certification of consistency with constitution, ordinance and other laws after which it is returned
- If such a Bill is passed, it is forwarded through the line Minister to attorney general for certification
- Attorney General certifies for consistency with parliamentary laws and constitution after which it is returned.
- The certified bill is then signed by District Chairperson to become ordinance for district bill or byelaw for lower council bills.
- The ordinance or byelaw is then published in the gazette, in local media or any conspicuous place

The soil and water conservation byelaw

The soil and water conservation byelaw as by 1989 had the following regulations:

- Any person who clears land for cultivation on a slope shall
  - construct bunds /barriers across the slope parallel to the contour
  - plant appropriate grasses or Agroforestry trees on the bunds
  - construct barriers as determined by technical agricultural extension officer
  - not plant annual crops on a steep slope, but plant trees

- Planting of crops shall be done along the contour
- Any person demarcating two plots shall not use farrows nor gulleys but mark stones, live hedges or shrubs
- All paths, cattle tracks and access roads shall be protected against erosion by runoff channels and soak away pits, and
- Paths or tracks may be closed by community leaders to prevent erosion and alternative routes provided

Any person disobeying the provisions of this law shall be guilty of an offence and shall on first conviction be liable to a fine not exceeding Uganda shillings (UShs.) 3, 000/= or imprisonment for 15 days or both and shall on any subsequent conviction be liable to a fine not exceeding UShs. 5,000/= or to imprisonment as may be effective.

The tree planting byelaw

Regulations under this law included:

- Any person who cuts a live tree shall
- plant two trees
- ensure the planted ones are protected and well looked after
- All persons who own private woodlots on hills and want to clear fell must first seek advice from forest department, local council and local chiefs
- Appropriate tree species shall be planted not less than 3 Meters on both sides of feeder roads
- Only Agroforestry trees shall be planted on the boundary, terraces of neighbouring plots. Other tree species should be planted at a distance not less than 3 Meters away on any other boundary
- The local committees with help of chiefs will make sure all road reserves are planted with rows of trees on both sides

Whoever contravenes the conditions of this byelaw should be guilty of an offence and shall on the first conviction be liable to a fine of UShs. 3,000/= and plant the number of trees felled. On second conviction will be liable to both imprisonment of 21 days and planting the number of trees felled (KDAD, 1989).

3.4.5 Knowledge and Assessment of Byelaws in Agriculture and Natural Resources Management

The household survey assessed farmers' awareness and perception of the effectiveness of the different regulations of these byelaws in agricultural and natural resource management.

Table 16: Knowledge and assessment of the effectiveness of selected byelaw regulations in resolving conflicts

Details of the regulation	Percentage*	
	Effective	Not effective
Construct bunds across the slope parallel to the contour	77.8	19.0
Plant appropriate vegetation on the bunds	63.5	27.0
Construct barriers guided by extension worker	30.2	54.0
Not planting annual crops on steep slopes	28.6	27.0
Planting crops along the contour	34.9	49.2
Demarcating two agricultural plots with mark stones	81.0	14.3
Paths, cattle tracks and access roads protected against erosion	17.5	30.2
Any person who cuts a live tree shall plant two and ensure they are protected and looked after	68.3	31.7
Farmers shall ensure livestock graze only when herded	92.1	08.0
Livestock shall graze in own piece of land except with consent of land owner	74.6	25.4
Animals shall not take water from same point used to draw water for domestic use	92.1	08.0
Pigs shall not graze where other animals graze	79.4	17.6
No grazing in crops and farmers whose crops are destroyed shall be compensated	96.8	03.2
No person shall set fire to a bush or part of it without authorization	85.7	07.9

In the event of fire outbreak all able-bodied members of community will participate in extinguishing it	82.5	17.5

** Percentages do not add up to 100%, some regulations were not known to farmers.*

Survey results show that farmers are generally aware of the two main regulations under the soil and water conservation byelaw. Constructing bunds/barriers across a slope parallel to the contour was very popular. This was due to the strict enforcement when the regulation was established and the current awareness about the dangers of soil erosion. Farmers mentioned that bunds were being dismantled to cultivate the lower fertile portions that have been under fallow for years and are thought to be more fertile than other portions on the upper part of the terrace. While close to 80% of both male and female farmers reported that constructing bunds/barriers across a slope parallel to the contour was an effective regulation, only 63% reported that planting appropriate vegetation on the bunds of the terrace was effective. Results showed that about half of the farmers were not aware of the tree-planting byelaw recommending that "only agroforestry trees shall be planted at boundary or terraces of neighbouring plots". Generally the establishment of bunds and their subsequent management were known to the people and popularly referred to as *Kati-kaa nkingo* literally meaning working for the bunds using a stick measured to the length of a hoe-handle. The popular plant species in use were the elephant grass and *Calliandra* sp., being distributed by *AFRENA*-Kabale and *AFRICARE*, both of them non-governmental organisations. The regulation which requires that any person demarcating two plots shall not use furrow nor gullies but mark stones, live hedges or shrubs was known and effective to over 80% because this is a native practice that almost every body knows. It was not effective to 20% of the people who answered it. People use *Euphorbia* spp. (*Oruyenje, Enkukuru*), *Dracaena* spp. (*Omugorora, Omugorogoro*) and any woody perennials that can be accepted by the community. Mark stones were not very popular since they are normally used by professional land surveyors during land registration, which would be expensive for most people in villages.

The regulation which requires that any person who cuts a tree plants two and ensures they are protected was known and effective to 68%, including 28 (67%) males and 15 (33%) females. The regulation was known but not effective to 25% who included 14 males and six females. About two thirds of those who did not know about the regulation were females who should therefore be encouraged to participate in tree farming. This popularity was because in most cases the trees to be cut are Eucalyptus spp. *(kalitunsi)* and Acacia sp. *(burikooti),* which have natural capacity to regenerate by sprouting and seed. The regulation was not effective because further tree planting depends on the available land and land-use priorities, because sometimes the woodlots are cleared to plant millet or expand pasture space. Similarly, the regulation that all persons who own woodlots on hills and want to clear fell are supposed to first seek advice from Forest Department, local councils and chiefs; was known and effective to less than 5% respondents with close to 70% saying it was not known. Respondents felt the regulation incompetent and they wondered what would happen if the chiefs refused to give the so-called advice. It is important to note that advice could mean permission, thus creating confusion; it should be limited to advice on how to effectively harvest while minimizing potential disaster. Again they felt the byelaw was difficult to enforce due to fragmented lands and the fact that the regulation cuts across jurisdictions (from extension to council and to chiefs). This is in line with Kamugisha's observation (Kamugisha 1993) that policies cut across government departments which interferes with enforcement.

It is interesting to note that the byelaw recommends that the construction of barriers and planting of vegetation on the bunds should be guided by technical agricultural extension worker. Agricultural extension officers came around 1948 and advised them to make them.

At that time the government leaders mobilized people to go to their own plots and measure and lay out the bunds. People worked together to construct the bunds, working on one plot together and them moving to the next. Later, the bunds were maintained on an individual basis. However, absence of government extension services rendered the enforcement of soil conservation byelaws ineffective. Bisamunyu (*pers.com*) confirmed that byelaws were enforced through the government administrative structure and observed that district commissioners and sub-county chiefs used to make inspection visits to villages mobilising people on sanitation and grain storage.

The enforcement of the soil and water conservation byelaws was very effective in the colonial times because there was strict and regular monitoring for compliance by extension workers, local chiefs and government administrators. Most soil conservation measures, especially the terrace bunds, were established during that period. This strict administration faded in the 1980s with civil unrest and the degeneration of administrative and extension services. The inefficiency of government extension services has partly led to the increasing number of NGOs that are actively working with farmers to combat soil erosion and land degradation. But given their nature and modalities of work, they don't have any capacity to enforce the implementation of byelaws. With the recent initiatives by the national agricultural advisory development services (NAADS) of privatising agricultural extension services in Uganda, there are concerns that public authority for enforcing such byelaws will further be lost.

The regulations on bush burning were very popular and perceived as effective to more than 80% of farmers. This was because almost the entire landscape is dominated by cultivated gardens. However, the enforcement of the bush burning byelaw was problematic because it is difficult to identify the offenders. In addition the penalty of 1000/= was not deterrent to any intending offender and was liable to abuse.

The grazing byelaw requires that any person who owns livestock shall ensure that livestock graze when they are herded because of the prevalence of cultivated fields. Where there are no herdsmen, then grazing fields are fenced off. For fragmented plots, it is obvious there ought to be somebody to look after animals. About three quarters (74%) of respondents said they were grazing on their own pieces of land. The regulation that no livestock shall be allowed to graze in cropland and people whose crops are destroyed by such livestock be appropriately compensated was very popular and seen as potentially effective in preventing conflicts for almost everybody (96%). Where people have agricultural crops as major source of income, any form of abuse to their crops would not be tolerated. There is also a specific regulation prohibiting pigs to graze with other livestock because it was felt that "pigs could infect other livestock".

The swamp and wetlands reclamation byelaw was seen as effective because of collective monitoring. Any member offending this regulation would be summoned to a community meeting, warned or requested to correct the offence or risk forfeiting membership and its benefits. However, this regulation is only effective for group members who have access to wetlands and have developed their own rules and regulations to better manage the wetland resources for a collective good.

It has been argued that the livelihood of communities using natural resources is being threatened by the very policies of government meant to bring development. First, most African countries are still largely dictated by norms if not policies that have a colonial legacy. Colonial governments were powerful and the use of that power without fully taking into consideration the interests of people has persisted among African governments. It has been

argued that most of the initial laws in Africa were not always drafted in the interests of the communities and for that matter they were drafted with little understanding of the environment, the natural resources and the communities which lived near these resources (Mascarenhas 2001). It is evident from the results of participatory analysis of byelaws that it is important to develop the required capacity for implementing the byelaws and enhancing community level participation in formulating and monitoring byelaws. For more than two decades, participatory methodologies have proved effective in enabling people to take greater control of the development process. However, with few exceptions, efforts have not focused on increasing local participation in policy review and formulation. Participation can be promoted by facilitating dialogue where community members or community representatives can engage in dialogue with local leaders and government officials and other stakeholders.

4 The Many Faces of Natural Resources Management Conflicts in the Highlands of South-western Uganda

4.1. Types and dimensions of conflicts

We defined conflicts as situations involving people or social groups with different interests, and mutually antagonist tendencies and opposing influences competing for the use of limited resources to ensure their or enhance their livelihoods. Conflicts arise from opposing interests such as competition over scarce resources, differences in perceptions and attitudes and increasing interdependence among resource users. In the exploratory surveys and key informants interviews, we found that the word conflict generally carries a negative connotation commonly associated with violence or threat of violence (Upreti, 2003). To encourage people to speak about and see conflicts as part of human interactions, we asked:

> *"From working in other areas, we have seen that problems and disputes over the use of natural resources can be common among people in the same area. Would you give use some examples of such problems and disputes in your areas? Please tell us what was the problem, who was involved? What were the reasons and how these problems were solved? How have the people tried to address the conflict? What was accomplished? Was an agreement reached? What were the consequences or damages caused?*

Eventually, all the households interviewed reported knowledge of NRM conflicts, with the majority of farmers reporting more than three conflicts (55.6%). There was no significant difference in the number of conflicts reported by men and women (t value =-0.327). We finally inventoried 701 conflict cases from the household and individual survey, while the analysis of court cases inventoried 79 cases of conflicts over the use and management of natural resources. These results suggest that conflicts are common and are an important characteristic of the use and management of natural resources.

Table 17: Percentage distributions of farmers by number of NRM conflicts reported (%)

Number of conflicts reported	Men	Women	Total
No conflict reported	01.4	01.4	01.4
1-3 conflicts	43.5	42.5	43.0
4-6 conflicts	31.9	31.5	31.7
7-10 conflicts	20.3	19.2	19.7

More than 10 conflicts	02.9	05.5	04.2

Table 18 shows that livestock grazing and boundary disputes are the most common forms of conflicts affecting over 70% of households, with no difference between sub-county groups as well as gender. Land grabbing and land inheritance disputes were also reported as increasingly common in the two sub-county groups. Other important common conflicts in all the two sub-county groups related to stealing of crops and livestock, cutting of trees as well as bush-burning and destruction of terraces by fellow farmers. Bush burning conflicts were more pronounced in Ikumba-Kashambya while destruction of terraces by neighbours was more common in Rubaya-Bubale. A particular form of conflict, park animals destroying field crops, opposed local communities to the Bwindi impenetrable national park in Ikumba (43%), while eviction from wetlands was more common in Kashambya. The results also revealed that about one third of NRM conflicts directly involved women.

Table 18: Types of conflicts in natural resource management and use the study communities (N=701)

	Rubaya and Bubale	**Ikumba and Kashambya**	**All**
Livestock grazing on crops	77.2	71.6	74.7
Boundary conflicts	74.7	65.7	70.5
Stealing of crops and livestock	49.4	41.8	45.9
Cutting of trees	43.0	43.5	43.1
Land grabbing and selling	36.4	53.7	43.9
Bush burning	29.5	52.2	40.0
Land inheritance conflicts	24.1	33.3	28.3
Animals raiding crops	11.5	43.3	26.2
Eviction from farm land and wetlands	8.8	43.6	24.7
Terraces destroyed by neighbours	34.2	26.3	24.3
Conflicts involving women	31.6	33.3	32.4

For easy of discussion, we group these different types of conflicts into three types: land disputes and intra-community conflicts; conflicts between local communities and park authorities, and gender-related conflicts.

4.1.1 Land Disputes and Intra-community related Conflicts.

One of the most common types of conflicts relate to boundary conflicts, affecting over 70% of households. This type of conflict is fuelled by the excessive fragmentation of very small agricultural land, and the high competition over the use of farmland. This increasing competition has also created different types of land disputes, from illegal sale of land, grabbing of land, eviction from wetlands as well as inheritance disputes and other forms of conflicts over the ownership, access and use of land.

There was heavy rainfall which caused trenches to slide by erosion and destroyed the path which served as demarcation between two farmers' plots. One farmer, Bandiho, sent his son to remove eroded soils and materials from the path. The neighbour, Turyamubona, accused him of destroying his crops and encroaching on his land. He reported the case to community which ruled in favour of Bandiho. But Turyamubona was not satisfied and decided to take the case to the sub-county court. The sub-county court ruled in his favour and summoned Bandiho for having encroached and destroyed his neighbour's land. After two weeks of court proceedings, Bandiho was fined U.Shs 25,000 to pay to the court.

Livestock grazing on field crops is the generalized form of conflicts affecting the majority of households in all the surveyed communities. This type of conflict is more acute shortly after planting, and usually oppose farmers keeping small livestock (goats, sheep and pigs) to farmers cultivating food crops. Traditionally, there was common grazing land where farmers would take their livestock during rainy season, away from cultivated field crops. However, with increasing competition for resources, most grazing land has been turned into farmland for individual farmers. In addition, children who use to take care of livestock are now attending school under the universal primary education. Some farmers with sufficient resources can still afford to hire people to graze their livestock. Poor farmers are forced to keep their livestock near their homes or close farmland or on free range. In many cases the small stocks (goats) escape and commonly graze on beans, sorghum, potatoes that have just germinated or still in a juvenile stage. Other forms of crop-livestock conflicts include theft of livestock and crops, usually goats and chicken and in some cases crops.

Conflicts over grazing land are also increasing, and in many cases result into violent clashes between farmers and between communities as in this case:

> *Farmers from three neighbouring villages used to graze their animals communally. However, with increasing resource competition and pressure, it was resolved to restrict grazing rights to only residents of each village. Then some farmers from one of the villages decided to go and graze their animals in the other villages, despite these restrictions. The conflict erupted between farmers in the three villages and efforts to resolve it have not yielded results as clashes between community members continue to resurface. Efforts to resolve this conflict have involved community leaders, LC1 members of the three villages, and the sub-county, but no solution has been found.*

In many cases however, a peaceful resolution is found, often with fines imposed to the offender.

> (…) *While James left his land to fallow, four men used it for grazing their animals and the animals destroyed his trenches. The case was reported to the LC1. The LC1 committee instructed the offenders to either dig the trenches themselves or a fine of Shs 8,000 for hiring casual laborers to establish the trenches.*

The most frequent cases of land disputes were between relatives over inheritance and property rights, often involving women and their deceased husband's relatives:

> *"When my husband died, my brothers-in-law wanted to take our land and cows because we had five daughters and only one small boy. I pleaded with them that I needed the property to raise the children. They were just interested in the land, but not the welfare of their bothers' children. After several years of marriage and having children, I could not go back to my parents. I appealed to the clan leaders, but they were in favor of their children. My relatives, neighbors, and friends also tried to mediate, but the clan leaders still decided to give the land to my brother-in-law. Then I had no choice but take the case to the LCs. The LC leaders knew the background of the case as many of them were already involved in mediation and reconciliation attempts and they ruled in my favor and I was allowed to continue using it until my son becomes an adult to decide. But they also decided that I couldn't dispose of this land, or rent it, or exchange it with a more fertile land near the house. My brothers-in-law would not have accepted the judgment if there had not been a son. They are not happy and they don't talk to us or visit us. You see "Women are underrated, because they do not have their home".*

Many cases of land grabbing involve local community members and government officials and elites as expressed in this case:

> *…That land was a common grazing land; farmers were free to graze their cattle and livestock. Then one Gombolola (sub-county) chief claimed he had purchased the land from the government and had land titles. He ordered people out of the communal grazing land. Community members refused and instead reported to the district magistrate and chief administrative officer. For the past 10 years, no decision has been taken….*
>
> *Mugisha was given a plot of land to plant food crops by Tushabe, but instead planted eucalyptus. After some years, Tushabe wanted his land back, and ordered Mugisha to cut down the trees. Mugisha refused and instead claimed property over the trees and the land on which they were grown. Tushabe decided to cut down all the trees to claim his land - becoming violent. The LC1 was unable to resolve the case because it had became a criminal case. Some Local Defence Unit (LDU) personnel from the sub-county came in and arrested Mugisha. He was imprisoned for some days and up to now they are still in courts of law.*

4.1.2 Conflicts between Local Communities and Bwindi Impenetrable National Park

This type of conflict is specific to Ikumba sub-county which borders the Bwindi Impenetrable national park (BINP). It is a conflict between local communities' concerns for livelihoods and national and international concerns for environment and biodiversity conservation. It is, as Bloomley (Bloomley 2003) points out an expression of divergent interests between different stakeholder groups at various levels and unequal power relationships between the stakeholders. The conflicts observed in BINP are of two kinds: conflicts over access and use of forest resources, and damages caused by wildlife animals in surrounding communities.

Bwindi represents one of the oldest and more complex biologically rich systems on earth. Previously designed as a forest reserve with relatively liberal and rarely reinforced regulations regarding access rights, Bwindi was accorded high protection status in 1991 as a national park and designated a World heritage site since 1994. It was renamed Bwindi Impenetrable national park. This had immediate effect of denying all access to the forest products to adjacent communities, resulting in huge amounts of conflicts and resentment (Bloomley 2003). The park is surrounded by slopping terrain supporting one of the highest human population densities in Uganda.

Table 19: Conflict narratives and respective outcomes

Narrative of Conflicts	Outcomes
Mr Monday had made arrangements with some park wardens to allow him collect some firewood in the park. Unfortunately, he was arrested by a different group. He was taken to the Park official who forced him to pay a lot of money.	Fine of U.Shs 150,000
X went to hunt in the forest (park), the rangers arrested him and took him away together with his dogs and the animal he had killed.	Fine of U.Shs 50,000. within one week
Y was arrested for cutting a tree in the forest; the boy had bribed some rangers but was arrested by a different group of rangers.	Fine of Shs 150,000, and 3 days imprisonment.

Narrative of Conflicts	Outcomes
One of the men who work on the road that passes through the forest cut a piece of wood from the forest to make a hoe handle. The rangers found him preparing it and arrested him	He was made to pay U.Shs 60,000 within one week, or be arrested.
Farmer Z went to graze his goats in the park area neighbouring his plot. While grazing the park rangers came and arrested him, he was taken away together with his goats and a dog.	He was made to pay a fine of U.Shs 40,000
Mrs. B. went to collect firewood from the trees near her land in the forest. She was arrested.	Fine of U.Shs 50,000 within one week and her tools (*panga*) taken away.
Some group of farmers went to the forest to get "enshuri" (papyrus reeds) used to make baskets.	Fine of U.Shs10,000 each within a day

Crop raiding by wildlife was reported as a major form of conflict contributing to the hostility between local communities and the park authority. These animals especially baboons and bush pigs, stray out of the park and destroy crops planted by farmers surrounding the park. These types of conflicts affect over 70% of farm households with farmland in Ikumba and the consequences have been considerable crop losses. The following narratives illustrate the nature of such conflicts, and more specifically the lack of equitable resolution mechanisms:

> *"It was some time in June 2002 when the baboons and bush pigs from the park destroyed my entire one acre of irish potatoes. I reported the case to the park officials who failed to give him a satisfactory response. So I called the LC to witness and assess the damages caused by the baboons. Though the damages were much higher, we agreed on a modest compensation of U.Shs 50,000. The negotiation took one week, but up to now no money has been paid".*

In contrast, when farmers are the offenders, force and coercion are used to impose fines on them:

> *(…) Farmer Y has a plot next to park. A tree fell from the forest and when he decided to cut it and get some timber for sale, he was arrested by the game rangers and fined a sum of shs 200,000 and all his tools - 2 saws, a panga and an axe were taken away by the rangers. It took almost one month because Y never had money to pay".*

4.1.3 Gender and Natural Resources Management Conflicts

As shown in the previous chapters, men and women are important resources users, and are directly or indirectly affected by the use and management of natural resources. In the highlands of Kabale, there are considerable gender differences in the use, control and access to resources, decision-making, rights and responsibilities, as well as the extent to which they are involved and participate in community activities, policy formulation and implementation. As important natural resource users, women are directly involved in conflicts. However, for too long, researchers and development practitioners have largely neglected the gender dimensions of conflicts. Concepts such as local communities, participation, and community-based natural resources management often mask important gender differences and inequalities in NRM conflicts. It is now increasingly recognized that gender analysis is fundamental for understanding NRM and NRM conflicts, and to constructively find ways of resolving conflicts (Hamilton and Dama, 2003; Means *et al.*, 2002)

The results of individual interviews revealed that about one third (31%) of reported conflicts directly involved women. Further analysis of conflict stakeholders and actors also showed that gender dimensions are indeed important dimensions to include in any conflict analysis.

These gender-based conflicts can be grouped into four broad categories:

(i) intrahousehold conflicts over use and control of land;
(ii) land inheritance conflicts;
(iii) access and use of land, and
(iv) property rights.

We distinguished three types of intra-household gender related conflicts: men's unilateral decision to sell land without their wives' consent; allocation of land to different women or households; and conflicts over use of land. Often, due to debts accumulated by men, or other plans that men may have, they may decide to sell part of their land against their wives' wishes, or without consulting them, as explained in the following case:

"…Robert used to drink a lot while he was not working, he was not even farming to generate money. But he needed money to drink. He had accumulated a lot of debts from many people in the village. He finally decided to sell land to pay his debts. His wife refused to consent to his plans. He still went ahead and sold the land to another person outside the village. When the buyer came to use the plot, the woman prevented him from accessing the land… She was beaten by the husband and the case was brought to the LC court. Although Robert argued that the wife does not have any say on his property, the LC asked him to refund the money or convince the wife to consent to the sale, which the wife refused. He was unable to refund the money, and the case was referred to the sub-county court. To avoid her husband's imprisonment, the woman sold some crops and household property, and borrowed some money to pay the debt."

(…) There was this man who sold a piece of land without his wife's consent. The woman reported to the husband's clan, but the clan elders supported the man's decision to sell his land, because he convinced them that he needed money to marry a second wife. The woman continued to protest and she was beaten and chased away by her husband. She then appealed to the LCs who overruled the judgement in favour of the woman because she had children to feed. The man left the village to find work in Bunyoro and abandoned his family. He is now married to another woman there and has two children (…)

"Karegyesa bought 2 pieces of land where he intended to plant eucalyptus woodlots for pole production. He then left for the city where he was working. The wife decided to plant beans and sorghum on the two plots. When Karegesa returned, he decided to uproot the sorghum and beans to plant his trees. The wife protested and claimed that the two plots were purchased with her money and therefore should belong to her (…). There was a fight between the two. The case is still pending for lack of witness, but the clan leaders for both sides are trying to solve the problem".

In some cases, conflicts opposed co-wives in polygamous households over the use of farmland:

"*…Bajura married 2 wives in the same village. The oldest, Tamukiza, had no children. He decided to allocate all the land to the second wife who had more children. The second wife planted beans and sweet potatoes on one of the farms that was used by the older wife. The two women fought, and their parents-in-law tried to solve the problem. But because the husband was not in the village, they could not listen to anybody. When the husband returned, he confirmed that he had allocated the land to the second wife because she had more children. Tamukiza reported to LC2 but The LC2 chairman was also her husband's relative and friend. She then went back to the clan leaders who decided that she had right to*

some of the farmland because she was still married. The husband complied. This case took 5 months to be resolved".

However, majority of men denied existence of gender conflicts: "*There have been no cases in the village of men selling land against their wives' wishes. They normally discuss and agree, for example, to use half of the money to acquire new land, or pay medical bills or school fees."* They instead argued that most land conflicts involving women relate to inheritance rights, and often oppose widows to brothers-in-laws. This was indeed the most widespread form of land-related conflicts directly involving women. There were also cases of land disputes between widows and her deceased husband's children:

> "(…) *This man married a younger wife after his first wife died. He also died after some years and left his younger wife with five children. The older children of the first wife who were residing in other villages claimed all the property and did not give anything to the younger widow. She presented a will left by the husband, but this was rejected by the husband's older children and relatives. She was instead accused of doctoring the will with the intention of looting family assets. She was asked to leave the village. A meeting involving the clan elders, the children, relatives of the widows, and church leaders was called to resolve the conflict. After hours of negotiations, it was resolved to share the farm property between the widow and the older children. Because the widow had also children, she was entitled to a farm, two dairy cows, and one tree plantation to generate income to pay for school fees of the younger children…"*

In some cases, the deceased husband's children are also women:

> *"There was this man who had daughters only from his first wife. The daughters were all married in town and they were rich. They bought some land in the valley and dairy cows to their father. When he died, the daughters claimed property of the dairy farm. Clan elders and the LCs opposed this decision, because their father had left a widow with male children who should inherit the land. The elder daughter who lived in town and had money did not respect the LCs and clan elders, and instead took the case to the district (LC5) magistrate, who ruled in her favour, because she was powerful. But the LC1 executive and community members refused the judgement and encouraged the widow and her children to stay on the farm. She bought another farm and took all the dairy cows to her new farm. Now the powerful daughter is not helping them anymore and the farm has deteriorated."*

But the decisions are not always in favour of the widows:

> "(…) *When the husband of Bibiane died, her brother in-law sold her land to Didas. The widow reported to LC1. She was asked to pay U.Shs 10,000/= as court fees and provide food and drinks for the LC executive. She did not have the money and the case was not discussed. The land was taken by Didas".*

In general, we found that conflicts between women (co-wives; mothers and daughters-in-law) and men (mothers and sons; women and husbands, brothers and sisters) generally are over access to and use of land and crops.

> *"(…) Byaruhanga had two wives. Each had her farmland properly demarcated. He also had his own separate plots where he grew potatoes and cabbage. So when he left for Bunyoro, the two women all claimed Byaruhanga's Irish potatoes and cabbage plots. The first argued that she is the older wife, while her co-wife argued that she has provided more labour to cultivate the crops. Clan elders first tried to mediate between the two wives but they were accused of not being impartial and fair. Because the two*

wives belonged to the same women's group, the group facilitated an agreement to help them harvest the crop, sell and share the money equitably. Both women agreed to the group's mediation."

"(…) Mercy returned to her parents after failing in her marriage. Her father gave her a piece of land to farm. When he died, the son who was left as an heir decided to take the farm from his sister, because women do not inherit land. He refused to comply with the advice of the clan elders, his mother and other relatives. Instead, he rented the sister's land to his neighbour. The sister reported the case to LC 1 who ruled in her favour. The land was left under the care of the woman".

It was further revealed that women face problems where there are conflicts over land. The majority of cases result into family problems including domestic violence (51.1%), divorce and various other forms of social exclusion (53%). Twenty two percent of both male and female respondents reported that becoming landless is a major problem faced by women. In general, women are marginalized and lack support to solve gender-related conflicts, which are often ignored. Conflicts involving men and women are usually sorted out at clan level, often to the disappointment of women. The status of women in a patrilocal and patrilineal society coupled with unequal distribution of resources is the major cause of gender-related conflicts. However, the interviews also revealed that in many cases, women lose temper and end up fighting with the defaulters, and this may aggravate the conflict. The original cause of conflict is neglected and people focus only on the consequences. Women also usually lack confidence in themselves; they think that they cannot win their husbands or any other man

It has been suggested that women are frequently those with the strongest community and kin ties and they help to sustain the social fabric due to their social embeddedness in family and neighbourhood ties and their responsibility for the domain of social reproduction (Molyneux, 2002). However, as shown in the narratives, it is not always the case for gender related conflicts. Since power relations within societies are reflected and reproduced in social networks, women find themselves disadvantaged in different ways. First they do not belong to the clan structures and networks that are involved in managing conflicts. In the case of conflicts, the clans operate through male-in groups in masculine social spaces which exclude women. In the implementation of byelaws and policies designed to resolve conflicts, a critical gender perspective is essential if the current inequities and social power relations are not to be strengthened

4.2 Correlates of NRM Conflicts

The correlation analysis showed that the different types of conflicts were generally independent of each other. However, there were strong relationships between boundary disputes and cutting of trees. Similarly, there were significant relationships between destruction of terraces and gender-related conflicts, suggesting that women were likely to experience this type of conflict more than men. This is understandable considering the fact that women are generally more involved in agriculture than men.

Table 20: Correlation between different types of intra-community NRM conflicts

	Boundary disputes	Terraces destroyed	Cutting of trees	Livestock grazing	Women conflicts
Bush burning	0.211**	0.03	0.16**	0.15*	0.153*
Boundary disputes		0.14	0.25***	0.17**	0.052

Terraces destroyed			0.06	0.17**	0.27***
Cutting of trees				0.19**	0.26
Livestock grazing					0.67

*Pearson Correlation; 2-tailed test *Significant at 10%; ** Significant at 5%; ***Significant at 1%.*

The relationship between bush burning and cutting of trees was also important because bush fires usually occur during the dry season and affect more people owning woodlots. Because conflicts related to livestock grazing on crops were the most common, it is not surprising that they have significant and positive relationships with other types of conflicts.

We also analyzed correlations between selected types of conflicts and NRM practices by farmers. Our initial hypothesis was that the prevalence of conflicts is a major barrier to the adoption of NRM technologies. Results of correlation analysis between prevalence of conflicts and use of NRM technologies did not support this hypothesis. On the contrary, the results show significant positive relationships between conflicts and NRM practices (Table 21).

Table 21: Correlations between NRM conflicts and NRM practices

	NRM Practices					
	Number of NRM technologies purchased	**Willingness to purchase NRM technologies**	**Planting of trees**	**Making trenches**	**Constructing new terraces**	**Use of agroforestry**
Bush burning	0.22**	0.30***	0.041	0.03	0.021	0.29***
Boundary disputes	0.21**	0.24***	0.02**	-0.08	-0.11	0.21**
Destruction of terraces	0.03	0.22**	0.05	0.00	0.22***	-0.06
Cutting of trees	0.34***	0.20	-0.04	-1.22	0.037	0.14*
Livestock grazing	0.07	0.17*	0.02	0.04	0.052	-0.08
Gender conflicts	0.26***	0.31***	0.00	0.01	0.21**	0.038
Conflict index	0.31***	0.31***	0.07	-0.14*	0.14*	0.15*

*Pearson Correlation; 2-tailed test *Significant at 10%; ** Significant at 5%; *** Significant at 1%.*

The number of NRM technologies practiced by farmers had a significant positive relationship with most types of conflicts; except destruction of terraces and livestock grazing conflicts. In the same vein, farmers' willingness to purchase and use new technologies was positively related to many types of conflicts. There was a significant relationship between conflicts related to the destruction of terraces and the construction of new terraces and farmers' willingness to purchase NRM technologies, particularly trees. There was also a significant positive correlation between the adoption of agroforestry technologies and bush burning, boundary disputes, cutting of trees and the general conflict index. These results suggest that conflicts may have some positive outcomes; in this case, they provide incentives for the adoption of NRM technologies

Table 22: Probit model of the determinants of boundary conflicts:

Variables	Coefficients	Z values
Gender (1=Women)	-0.366	-0.08
Age	-0.233	-1.37
Education	-0.748	-2.25**
Income	-5.58e-07	-0.501
Collective action	0.079	1.965**
Bonding Social capital	-0.910	-1.647*
Ownership of livestock	-0.625	-1.19
Subcounty (1=Rubaya)	-0.733	-1.89**
Linking social capital	1.405	2.047**
Number of plots	-0.030	-0.070
Number of adult males	0.156	1.064
Woodlots	0.733	1.885*
LC Executive	0.512	0.123
constant	0.362	1.619
N=88; Log likelihood= -38.24; Pseudo R^2=0.47		

*Significant at 10%; ** significant at 5%; *** significant at 1%

Out of the 13 variables included in the model, six were significant in determining the probability of occurrence and reporting of farm boundary conflicts. There was an inverse relationship between farmers' level of education, the extent of bonding social capital and the location of the households and the prevalence of farm boundary conflicts. Results about the influence of social capital on the prevalence of boundary conflicts were mixed. While the amount of bonding social capital, measured as membership to local groups and farmers organizations significantly decreased the prevalence of conflicts. It is interesting to note that farmers belonging to the same groups and organizations with many of their neighbors reported less conflicts. This suggests that conflicts are probably avoided or mediated within the group before they become public. The results also suggest that farmers groups and organizations play an important role in mediating conflicts. Earlier results have also shown that the capacities of groups in resolving and preventing conflicts were high, as most conflicts are resolved. Conversely, the extent of linking social capital, measured as participation in research and development activities seemed to increase the prevalence of conflicts. It is generally believed that farmers endowed with bonding social capital are more likely to participate in development activities, particularly because R&D organizations operate through farmers' organizations. However, not all farmers belong to such organizations and there are several other local organizations active in the communities.

As discussed earlier, the probability of boundary conflicts was significantly higher in Rubaya and Bubale, compared to Ikumba-Kashambya. Because of high population pressure and land scarcity, it is understandable that disputes over land boundaries and management of farmland are more prevalent in the former sub-counties. Ownership of woodlots also significantly

increased the probability of conflicts. The different narratives of conflict situations reported in the previous and following sections confirm these results. Results also show that the probability of reporting boundary conflicts also decreased with education levels suggesting that farmers with higher education levels are more likely to demarcate their plots and even have land titles. Although negative, the effects of gender, age, farm income and number of plots were not significant.

As shown in the narrative cases, it is evident that NRM conflicts have multiple and complex causes. In the majority of cases, farmers linked NRM conflicts to increasing poverty and decreasing livelihood options, resulting in land shortage, lack of grazing land and community woodlots; and competition over the access, control and use of resources. Other causes include inheritance disputes between siblings, widows, and the deceased relatives, or unequal share of resources between relatives. However, there are increasingly many cases of inappropriate land management practices and behavior ("greed and big headed"), accounting to about 46% of reported conflict cases. For instance, interviews with local leaders in Kagarama and Butobore parishes revealed that there are many instances when some community members trespass their neighbours fields, not because they are poor, but because they are jealous of one another.

5 Natural Resource Conflicts Management Mechanisms

5.1 Conflicts Management Mechanisms

As illustrated in the narratives presented in the previous sections, it is evident that farmers use several mechanisms for managing conflicts. There are a number of choices and options for managing conflicts. While the specific mechanisms for managing conflicts vary with the conflict type, nature, levels and stakeholders or actors involved, we found that people generally rely on five general mechanisms to manage conflicts: avoidance, negotiation and mediation, arbitration, adjudication and coercion. In many situations however, there is a combination of different resolution mechanisms, some time in synergy or sequence, but also in contradiction and conflicts.

Table 23: Relative importance of conflict resolution mechanisms

Resolution mechanisms*	Percent of responses (N=667)
Avoidance: People don't report problems, they try to solve them	34.8
Mediation and Negotiation: People usually rely on clan elders, relatives and neighbors to solve conflicts	29.3
Arbitration: People report problems to the LC1	39.9
Adjudication: People take problems to courts	2.5

* Coercion and violence not included in the table

5.1.1 Avoidance

Avoidance is an approach used to keep conflict from becoming known to the public, was found in about 34% of cases. Many conflict cases are not reported because they are avoided or resolved within the household, or without a third party. This occurs when one party opts out, maintaining relationships based on goodwill (Upreti, 2000). Avoidance is often used when the conflict is trivial or of passing importance, or when confrontation has a high potential for damage, or when others can resolve the conflicts more effectively (Means *et al.*, 2002).

The desire to avoid confrontation outweighs the goals that the parties are trying to achieve. From the interviews, it was often reported that "... *there have been no serious (violent) conflicts in the village in the last 15 years. Simple cases of disagreement with neighbors are solved locally by the elders. Misunderstandings between two people are taken to clan leaders who call four to six people as witnesses, to mediate the case and reach a decision. Usually what is decided is respected. If not, the case is referred to the LCs for arbitration."*

5.1.2 Mediation and Negotiation

Negotiation is a voluntary process in which conflicting parties meet to reach mutually acceptable decisions. Upreti (2000) distinguished two forms of negotiation: distributive and integrative. Distributive negotiations focus on resource distribution issues, creating a win-lose outcome. The attitude of the negotiating parties is to focus on their own interests. In contrast integrative negotiations seek to create a win-win outcome. Conflict parties are open to alternatives and pay attention to the interest of the other party through a problem solving approach. It usually leads to collective decision-making and commitment by both parties to achieve an optimal, collective solution.

> *"This woman…. has been planting her sorghum in my farm without my permission for two seasons. The first time I allowed her to harvest her sorghum. The following season she went back and planted beans and now she is planting sorghum again. I have asked her to find another place to farm but she has refused. She is a widow and has no one to help her. If I take the case to the LC1, they will decide against her. I am just being patient hoping the woman may reform but she is not reforming. Maybe I will now take the case to the LC1 if she continues for six months. But I will see".*
>
> *….According to woodlot byelaw, one is supposed to leave some space (about 3 m) from the boundary to avoid shading neighbors' field-crops. When this neighbor saw that the man left space, he kept cultivating towards it until he occupied all of it. The man realized it and raised the issue with his neighbor. The boundary was shifted back to its original position and there were no fines".*
>
> *"A woman who lost her husband wanted to sell her husband's land without informing her brothers-in-law. When they learnt about her plans, they persuaded her not to sell and stay in the village."*

Conflicts become manifest when they involve a third party. The interviews and case studies revealed that many gender-related conflicts are avoided and do not come into public domain. Usually what is decided between the two parties is respected. The clan leaders and LC system are involved when the parties fail to reach an understanding.

In over 20% of cases, mediation was effectively used as an effective mechanism accepted by the parties to resolve their conflicts. In this case, the conflict is mediated by clan elders, relatives or neighbors through negotiation and conciliation.

"A tree was planted on the boundary of the farm by one farmer. When the tree grew, some branches fell in the neighbour's plot. The neighbor cut these branches that fell in his garden and took them, without consent of the other. This case was taken to the LC 1, who referred the case back to the community members. The members resolved that, the two men should share the tree, and that the neighbour has the right to prune the branches that fell in his garden."

"A man's land was bisected by an uncultivated strip where animals passed through. Upon his death, the land was distributed to his two sons, but not the animal passage. One brother with cows wanted to maintain this strip, but the other wanted to divide the strip in order for him to cultivate a larger area. This problem was taken to the LC1 chairman. The LC chairman consulted other elderly people, including an old woman who knew the history of the area. The mediation encouraged the non-cattle owning brother to invest in animals to make use of the strip."

5.1.3 Arbitration

Arbitration involves a third party, usually the LC executive who are empower by the Local Government act to resolve disputes and conflicts, and to enforce the implementation of byelaws. The recourse to the LC system is the most popular form of conflict resolution mechanism observed. Survey results revealed that arbitration by the LC system is the most common mechanism, used in about 40% of conflict cases. Majority of the conflict narratives reported in the previous chapter involved arbitration at the LC1 level, and in general the decisions are accepted by the parties in conflict.

"When my husband died, my brothers-in-law wanted to take our land and cows because I had five daughters and only one small boy. I pleaded with them that I needed the property to raise the children. They were only interested in the land, but not the welfare of their bothers' children. After several years of marriage and having children, I could not go back to my parents. I appealed to the clan leaders, but they were in favour of their children (my brothers-in-law). My relatives, neighbours and friends also tried to mediate, but the clan leaders still decided to give the land to my brothers-in-law. Then I had no choice but take the case to the LCs. The LC leaders knew the background of the case as many of them were already involved in mediation and reconciliation attempts. They ruled in my favour, allowing me to continue using the land until my son becomes an adult to decide. But they also decided that I couldn't dispose of this land, or rent it, or exchange it with a more fertile land near the house. My brothers-in-law would not have accepted the judgement if there had not been a son. They are not happy and they don't talk to or visit us. You see: women are underrated, because they do not have their home".

5.1.4 Adjudication

There are also many cases of conflicts, which were resolved through adjudication, relying on the sub-county courts and other administrative procedures to make a binding decision. We analyzed court cases in the four sub-counties and inventoried about 79 land related conflicts (Table 24) over a period of five years. About 75% of all the conflicts taken to courts involved disputes and conflicting claims over land, including inheritance rights, land grabbing, cutting of trees and criminal trespass. As the conflict narratives presented previously have showed, these cases involved a variety of stakeholders, and have various levels, and dimensions. They also have a multitude of causes. Although farmers expressed fairness in the ability of courts to resolve conflicts, most farmers would not take their cases to court for fear of excessive fees and other administrative charges to be borne by farmers.

Table 24: Inventory of conflicts taken to sub-county courts

Type of conflict s	No of cases	Conflict actors and stakeholders	Causes and claims
Land disputes	21	- Brothers, - Fathers and children - Widows - Women (Co-wives)	- Unequal distribution of land, - Inheritance claims/disputes - Property rights
Criminal trespass	13	- Cattle keepers - Local communities - NGO	- Need for pasture, grazing and farm land - Constructions and …
Sale of land	12	- Father and children - Widow and brother-in-law; Brothers	- Money for drinking, - To migrate
Grabbing of land	13	- Neighbours - Community and church - Orphans	- Unequal power relations - Need for more land
Encroachment of park resources	3	- Local community and - park authorities	- Livelihood needs and crop expansion - Animal (game) raiding on crop land
Bush burning	3	- Local farmers	- Animal grazing - Land preparation method - Destruction of property
Stealing of crops	2	- Local communities themselves	- Need for food
Destruction of boundaries	4	- Neighbours - Brother and sister	- Crop expansions
Cutting of trees	8	- Neighbours	- Need for fuel (charcoal)

The interviews and case studies concur with Mean's observations (Mean 2003) that the court mechanisms are intimidating and inaccessible to the majority of farmers, especially the disadvantaged and women who are often uneducated and/or live far from the sub-county headquarters. The time to resolve conflicts, administrative procedures and other socio-economic and political barriers also prevent farmers from resolving their conflicts using this channel. Some conflicts are resolved in a matter of days, while other take a long time, up to 2 years, and sometimes more than 10 years.

It is important to note that in many cases, the adjudication process combine the different mechanisms of conflict resolution in a complex fashion involving different actors at different levels:

> *"James had a problem with his brother who was trying to use force to grab land from him on the basis that he was the eldest son and had worked on the land with their father. They went to the elders who found the brother guilty, but the brother did not accept the verdict and decided to go to the magistrate. The magistrate referred the case back to the LC1 which in turn referred the conflict to the clan elders. The clan elders also referred the case to the neighbouring village's LC as the land under dispute was in that village. The village elders ruled in favour of James. The brother then took it to the district high court in Kabale. Their mother was called as a witness and gave evidence in favour of James. However, shortly after, the mother died, and the brother came and occupied the land. He then sold the land. Subsequently he suffered some misfortunes and suspected his brother had bewitched him. As an act of reconciliation, he finally gave James another piece of land to resolve the conflict. The whole process took 2 years."*

The main outcomes of adjudication have been imposing fines to the offenders (67.8%), and imprisonment of offenders (10 cases). Other cases are dismissed by the courts and referred to the LC1 for mediation and arbitration.

5.1.5 Coercion and violence

Coercion occurs when one party is trying to impose one's will through the use of force, including violence, economic and political dominance to resolve a conflict regardless of the consequences to the other, creating a win-lose outcome (Upreti, 2000). In the case of conflicts opposing local communities to park authorities and to government structures, the use of force and coercion was the most common mechanism used by park authorities. This involved multiple forms of coercion and violence, including harassment, intimidation, fines and imprisonment. Several cases and narratives confirm that the park authorities impose heavy fines for any encroachment on the park resources. In many cases, farmers are arrested and beaten up by game rangers, and jailed for encroaching on park. On the other hand, as a result of their frustrations and anger, farmers have also resorted to some forms of violence like setting fires to the park.

> *"Mr. E. wanted firewood and decided to cut the trees he planted on his farm adjacent to the park. He was arrested and beaten up by the park staff. He reported to the LC1 who ruled in his favour and ordered he be paid U.Shs 400,000 in compensation. The International Funds for Tropical Conservation (ITFC) refused to pay and nothing has been done and he has nothing to do. It is up to 6 months since the judgement was passed."*

The closure of the park to surrounding communities immediately resulted in violent escalation of conflicts between local communities, park staff and the ITFC. Interviews with key informants confirmed Bloomley's report (Bloomley, 2003) that about sixteen fires were started in and around the park by local residents with deliberate intent of destroying the park.

There have also been cases of violent conflicts between farmers, neighbours, and even relatives.

> *Two step brothers (Simon and Rwaboona) migrated and left all their land behind. Later they came back to sell their land, which was already grabbed by other people. When Simon and Rwaboona reported to LC 1, the people became violent and used spears, dogs and "panga"s to chase away the LC and the complainants. The case was referred to the sub-county. The sub-county sent a team of soldiers to arrest the offender who were subsequently imprisoned."*

One important conclusion from these cases is that social capital mechanisms for managing conflicts are not effective for conflicts between local communities and external powerful stakeholders. While no compensation is paid for wildlife destroying farmers' crops, or park authorities trespassing on community resources, heavy fines and other forms of punishments (physical harm/beatings) and imprisonment are imposed to local communities for accessing and using park resources. Although farmers have reported the conflicts to LCs, they are often left unresolved. In many cases the park authorities used coercion as a mechanism to resolve conflicts, imposing their will trough the use of force, exerting unequal power relation. The conflict is exacerbated by the lack of clear mechanisms of compensation and conflict resolution. There are unclear provisions in the Wildlife Statue and Local Government Act and uncertainties over who should deal with such conflicts as well as reluctance from Park authorities to consider the option of culling the animals. Bloomley

(2003) provides an account of CARE's initiatives to manage park conflicts through mediation and negotiation between local development interests of resource poor households and the national and international interests of environment and biodiversity conservation. While there have been some cases of successful arbitration and negotiation, the unequal power relation between the local communities and national and international stakeholders has often meant that conflicts are resolved through coercion. Bloomley further notes that there is an inequitable sharing of conservation costs and benefits between different stakeholders. Conservation costs are borne by marginalized poor households adjacent to the park, while the benefits are enjoyed by wealthier tourists in the global community and national and international level stakeholders. Revenue sharing scheme between the park and local communities remains an issue of conflict, in particular contested by local government (Bloomley, 2003).

5.2 The Role of Social Capital in Managing Conflicts

As the case study narratives have shown, there are a number of local-level strategies that have evolved within the community to manage conflicts. The most commonly used mechanisms were mediation by clan elders, and community members who facilitated negotiation between conflicting parties to reach a mutually agreed decision. These social capital mechanisms have certainly many advantages. But we also found that they have some problems and bias, and in some cases have escalated conflicts.

Table 25: Capacity of actors and stakeholders to resolve conflicts

Actors and Stakeholders	Capacity of actors and stakeholders to manage conflicts			
	Low*	Medium**	High***	Not involved, can't tell
Clan elders	31.1	12.4	56.6	-
Neighbours	29.9	15.3	51.8	-
Relatives	26.1	12.3	61.0	-
Parish chief	24.8	13.1	*29.9*	32.1
Village members	22.8	16.6	60.6	-
LC2	22.6	30.2	*43.8*	3.5
Women groups	17.0	7.0	70.4	5.6
Sub county courts	13.9	15.3	61.1	9.5
Farmer groups	13.3	8.4	64.1	4.2
Church leaders	8.6	10.7	75.8	5.0
LC1	8.2	13.7	78.1	-
District court	7.2	7.9	61.2	23.7

*Low, important cases taken to them are often unresolved
**Medium, some cases are resolved but not always
***High, most cases are resolved

From the perspectives of the farmers interviewed, social capital mechanisms (clan leaders, neighbours, relatives, village members) have lower capacity for resolving conflicts, as most cases taken to them are often unresolved and often require intervention of local policy structures (LC1) for arbitration. These results suggest low levels of cognitive social capital or relation of trust between farmers and their traditional structures. The main factor of this distrust is lack of sanctions, or power to improve sanctions. There is nothing to ensure that those who break the rules will be punished, and consequently cooperative arrangements are unlikely to emerge.

A combination of social, economic and political factors has undermined the ability of local mechanisms, clan elders and community organizations to manage conflicts (Means *et al.* 2002). As stressed by farmers in many instances, some educated and wealthier farmers are not willing to accept decisions by local communities and clan elders and prefer to take their cases to legal and administrative structures at the sub-county level. The decentralisation process has established the local councils at village levels who concentrate both political and administrative powers to manage community life, including arbitrating disputes and making byelaws and other local policies.

However, it is interesting to note that farmers' groups, and particularly women's groups have relatively high capacity to resolve conflicts and most cases are resolved through mediation and negotiation within these groups. These results suggest that groups have high levels of bonding social capital (trust and cooperation, norms and rules within groups) as well as bridging social capital (capacity of groups making links with other groups, and linking with the LC system). The assessment of the capacity of different stakeholders to manage conflicts showed a clear difference in perception between men and women on the capacities of relatives, clan elders and neighbours to resolve conflicts. Typically, a considerable proportion of women (up to 38%), reported that many cases taken to relatives, clan elders and neighbours remain unresolved. Not all conflicts taken to the clan elders and community members were equitably resolved, or ended in harmony. These results are consistent with the patrilocal and patrileneal nature of the Bakiga culture. Such cases are taken to men's relatives or clan members who generally rule in the favour of their male relatives. In many cases as shown in the conflict narratives, the conflicts oppose women to their deceased husbands relatives over land after the death of their husbands.

The results of the study have shown that social capital is not evenly distributed within the community. While it has positive benefits to those who have access to and use it, there is also a downside to social capital (Colleman, 1988). Results also suggest that such mechanisms often have a high social cost for women and other vulnerable groups, who end up taking the burden of paying fines and other forms of social exclusion, to the benefits of men and rich farmers. The narratives eloquently showed that social capital based mechanisms did not always ensure fairness, especially to women, and other farmers embedded with less social capital. In many cases of gender related conflicts, we found that such mechanisms do not provide a fair and equitable opportunity or forum for women to express their grievance, and does not guarantee justice and fairness. However, we also found that increasingly the LC system is supporting of the vulnerable groups not lose in the process of resolving conflicts.

It is interesting to note that the LC1 (village administration) was perceived as most effective in resolving conflicts. This is usually done through arbitration and mediation, involving community members. Also the LC1 has power to impose decisions and sanctions on the people. In many villages, church leaders and group leaders are often associated with the LC 1 and are often called upon to assist in conflict arbitration and mediation. As you move up the ladder of decentralization - to the parish (LC2), the sub-county and the district - the capacity to resolve conflicts decreases. At these levels, adjudication and coercion are generally used, and many farmers perceived the process as being biased and not equitable.

We examined the reasons that would prevent farmers to take conflicts to different stakeholders (Table 26). The majority of farmers would prefer to take NRM conflict cases to their groups (48%), the LC1 (44%) and to relatives and clan leaders (42%). Relatively fewer people would take their cases to the sub-county (LC3) and district (LC5) courts. The

main reason for not taking conflict cases to higher decentralized government structures is the fear of fines and court fees associated with the process of conflict management. In addition to court fees and fines, the distance to the sub-county and district and the time that the process or arbitrating conflicts takes are important constraints faced by farmers. The judicial language and administrative procedures used in these courts are also alien to farmers. It is however interesting to note that these structures are perceived as relatively less-biased and corrupt compared to structures and institutions based on social capital (local ties and networks). This suggests a low level of trust and cooperation within the communities.

Table 26: Reasons that would prevent farmers from taking their conflicts to different actors

Reasons	Actors and stakeholders					
	Relatives & Clan Leaders	**Neigh bours**	**Groups**	**LC1**	**LC3**	**LC5**
Lack of money to pay for fees and fines	0	0	2.1	39.9	51.4	51.7
Conflict cases can be resolved at lower levels	14.0	14.2	23.4	7.7	8.5	9.2
They are biased and can be corrupt	25.2	31.2	10.6	5.6	2.8	0
They have the capacity to resolve conflicts	42.7	41.8	48.2	44.1	35.2	31.9

Although there are no financial costs associated with local mechanisms for resolving conflicts, a considerable number of farmers perceived local mechanisms as being biased. This perception was particularly significant for women compared to men, corroborating women's perceptions that local mechanisms are biased against them. Indeed most conflict cases involving women, or opposing women to their husbands' relatives are seldom resolved in women's favour.

5.3 The Role of Policy and Byelaws in Minimizing Conflicts

Although some communities have long been known to manage their natural resources conflicts effectively, recent years have seen the emergence of strict regulations or policies for sustainable management of natural resources. Several scholars have concluded that if natural resources are to be protected against the risk of destruction, it is essential that governments devise a range of policy instruments that can influence behaviour for the adoption of technology innovations and institutions that promote sustainable management of natural resources to alleviate poverty (Scherr *et al.,* 1996; Egulu and Ebanyat, 2000; Pender *et al.,* 2001). Some of the key functions of decentralized local governments is to assist in maintaining law, order and security; resolve problems and disputes, and make byelaws. Byelaws are rules made by lower local councils under the 1997 Local Government Act and provide the local policy guidelines to be followed in sectoral developments, such as agriculture and natural resource management. They are a viable alternative for enforcing government policies and rectifying their inefficiencies in agriculture and natural resource management. In a social capital framework, byelaws can also be seen as negotiated rules, social norms and agreed behaviours that exist within communities and that facilitate collective action.

The study revealed that many conflicts erupt because of poor implementation of byelaws. Table 27 shows that the main reasons for the ineffectiveness of byelaws include weak

enforcement mechanisms, outdated regulations, no sensitisation of farmers, conflicts between different policies and administrative structures (agriculture, forest and wetlands department) as well as lack of effective extension services.

Table 27: Farmers' assessment of the reasons for weak and effective byelaws

Reason for weak byelaw	**Percentage**
Weak enforcement	52.4
Farmers not sensitised	28.6
Outdated regulations	34.9
Legislative conflicts	23.8
Small fragmented lands	22.2
Lack of extension facilities	15.9
Others	17.4
Reasons for effective bye law	
Strong enforcement	44.3
Involved communities	36.5
Sensitised farmers	36.5
Have quantifiable outputs	33.3
Clear enforcement structure	14.3
Others	06.3

Two byelaw enforcement mechanisms are mentioned: fines and imprisonment. For example in the 1989 controlled grazing byelaw, any person who contravened any of the provisions of the byelaw would be liable to a fine not exceeding fifteen hundred Uganda shillings (1500/=) or to imprisonment for a period not exceeding 21 days. On the second and subsequent convictions, the offender would be liable to fine not exceeding U.Shs 3,000/= or imprisonment not exceeding 42 days or to both such a fine and imprisonment. Similarly, the tree planting byelaw recommends that whoever contravenes the conditions of this byelaw is guilty of an offence and shall on the first conviction be liable to a fine of U.Shs 3,000/= and plant the number of trees felled. On second conviction s/he will be liable to both imprisonment for 21days and planting the number of trees felled.

It is interesting to note the disproportion between fines and imprisonment. The fines are outdated. In many cases byelaws are outdated and their prescribed sanctions do not seem to be so punitive and can be easily abused. For example, it only takes two days of casual labour to generate U.Shs 1500, compared to 21 days of imprisonment. In many cases however, as shown in the conflict narratives, the fines imposed by local council are relatively reasonable and based on local realities, while the fines imposed by the courts and other government organizations are rather high. Many of the local leaders believed that a strong enforcement mechanism is the only way to make byelaws more effective: *ABakiga nibategyekwa kifuba* (local people must be compelled to comply).

The enforcement of byelaws was very effective in the colonial times and shortly after independence up to around 1977. There was strict and regular monitoring of byelaws by extension workers and chiefs who used to visit villages and arrest offenders. This strict administration faded in the 1980s with civil unrest and the degeneration of administrative and extension services. With the decentralisation process, the local chiefs are not so empowered to arrest and prosecute offenders and in some cases it is never clear whose role it would be. The dual nature of decentralisation has created some confusion on the roles of the different structures, and particularly between the elected local councillors and the government administrative and technical services. While the byelaws specify sanctions to be

imposed, it was not clear whose responsibility it was to enforce the byelaws. There is confusion of roles and responsibilities, and competition between elected councillors and the administrators

Frequent changes in local leadership would mean that some byelaws may not be implemented because their initiators have been removed from position of leadership. Political interference was often cited as a key constraint to byelaw enforcement at the local level. While government administrative and technical staff was often seen as corrupt, the elected local leaders are reluctant to oversee the enforcement of byelaws for fear of not being re-elected. The relationships within communities seen to interfere with byelaw enforcement included marriage patterns, where it would be difficult for in-laws to prosecute or report each other as offenders and friendships and neighbourliness, for fear of stigmatisation. Most times the enforcers are resident within the communities and elected to such positions which then compromises their method of work as they would want to be re-elected next time round. Other problems included corruption and laxity of local leadership who fail to enforce the sanctions. Other problems relate to peoples' attitudes towards the byelaws. In other cases it was never easy to identify the offenders because some offences are committed secretly, e.g. bush-burning and grazing in neighbours' land especially on distant land fragments. Some byelaws are considered as oppressive and inappropriate.

5.4 The Synergy Approach to Social Capital and Policy for Managing Conflicts

The results of the study showed that farmers use a plurality of strategies, processes and avenues to resolve conflicts, and create checks and balances that a single conflict management system cannot generate (Chevalier and Buckles 1999). Many conflicts were resolved through arbitration, taking the case to lower levels of local government, LC1, who facilitate negotiation between parties and renders a decision. Because of its embeddedness in and complementarity to local social capital, over 70% of farmers expressed high confidence in the ability of the LC system to manage conflicts. However, this confidence decreased significantly as one moves higher up the ladder to the LC2 and LC3, which are more remote and distant to community social relations. Here there is substitution and exclusion of social capital mechanisms by policy structures. However, it is important to note that in many situations, conflicts taken to the higher levels are referred back to the LC1 for more effective resolution mechanisms. In a significant number of cases, we found a positive synergy between social capital and local policy institutions or administrative procedures for resolving conflicts.

The results of this study suggest that the current emphasis of social capital in NRM literature should be understood within a broader context of the socio-economic and political economy of NRM. So, as Molyneux (2002) points out, instead of idealizing social capital, taking for granted, or ignoring its diverse forms and dimensions, a good place to start in producing a critical approach to developing more effective policies, would be to examine the process and outcomes of different conflict minimizing strategies. Sociological research has suggested that a decline in social capital or social solidarity clearly correlates with the worsening position of the disadvantaged. As much as poverty can generate social capital where kin ties are strengthened, poverty also erodes the fabric of social life. As assets decline, the poor cease to engage in exchange relations and avoid dependencies such as borrowing for fear that they cannot repay (Moser, 1998). In such circumstances, kin relations become strained as demands for support for vulnerable relatives grow. Therefore, sustaining and strengthening social capital are critically dependant upon wider policies that help to determine the

resources available to people. In conditions of poverty, social capital "coping strategies" might be a preferable and less value-laden description than social capital which denotes the forms of cooperation that arise.

On the other hand, policies work best when, through redistributive and capacity building measures, they strengthen the capabilities of agents to enter into voluntary and mutually beneficial collective action and negotiation, sustainable over time, rather than being only short term solutions. Evans (Evans 1996) and Tendler (Tendler 1997), noted that successfully participatory projects have frequently depended upon a creative synergy between state (policy) and civil society (social capital). Social capital mechanisms are important resources for managing conflicts and improving the management of natural resources. But they are not the substitute for effective policies designed to achieve better management of natural resources. Social capital is a concept that converges with the policy of decentralization of natural resources management. First, social capital conforms to the emphasis on decentralization and subsidiarity as social capital is generally assumed to be the property of local communities and local organizations. The emphasis on community-based natural resources management is based on the believe that communities are more efficient than state structures in the management of natural resources, and in the resolution of conflicts. Social capital is assumed to reduce the costs of development and enhance efficiency through the mobilization of resources that considered to be sustainable because they are in collective interest.

Table 28 below summarizes the strengths and limitations of social capital mechanisms and policy mechanisms for conflict management.

Table 28: Strengths and limitations of different conflict management mechanisms

Conflict management systems	Strengths	Limitations
Traditional and customary Systems (Social capital)	-Encourages participation by community members and respect of local values and customs -Provides familiarity of past experience -Can be more accessible because of low cost, use of local language, flexibility in scheduling -Decision-making is often based on collaboration, with consensus emerging from wide-ranging discussions, often fostering local reconciliation -Contributes to a process of community self reliance and empowerment	- Not all people have equal access to customary conflict management practices owning to gender, class, caste, ethnic or other discrimination -Courts and administrative law have supplanted authorities that lack legal recognition -Communities are becoming more mixed, resulting in weakened authority and social relationships -Often cannot accommodate conflicts among different communities, or between communities and government structures, or external organizations
Legal and administrative systems (Policy)	-Officially established with supposedly well-defined procedures -Takes national interests, concerns and issues into consideration -Decisions are legally binding.	-Often inaccessible to the poor, women, marginalized groups and remote communities because of the cost, distance, language barriers, illiteracy and political discrimination -Judicial and technical specialists

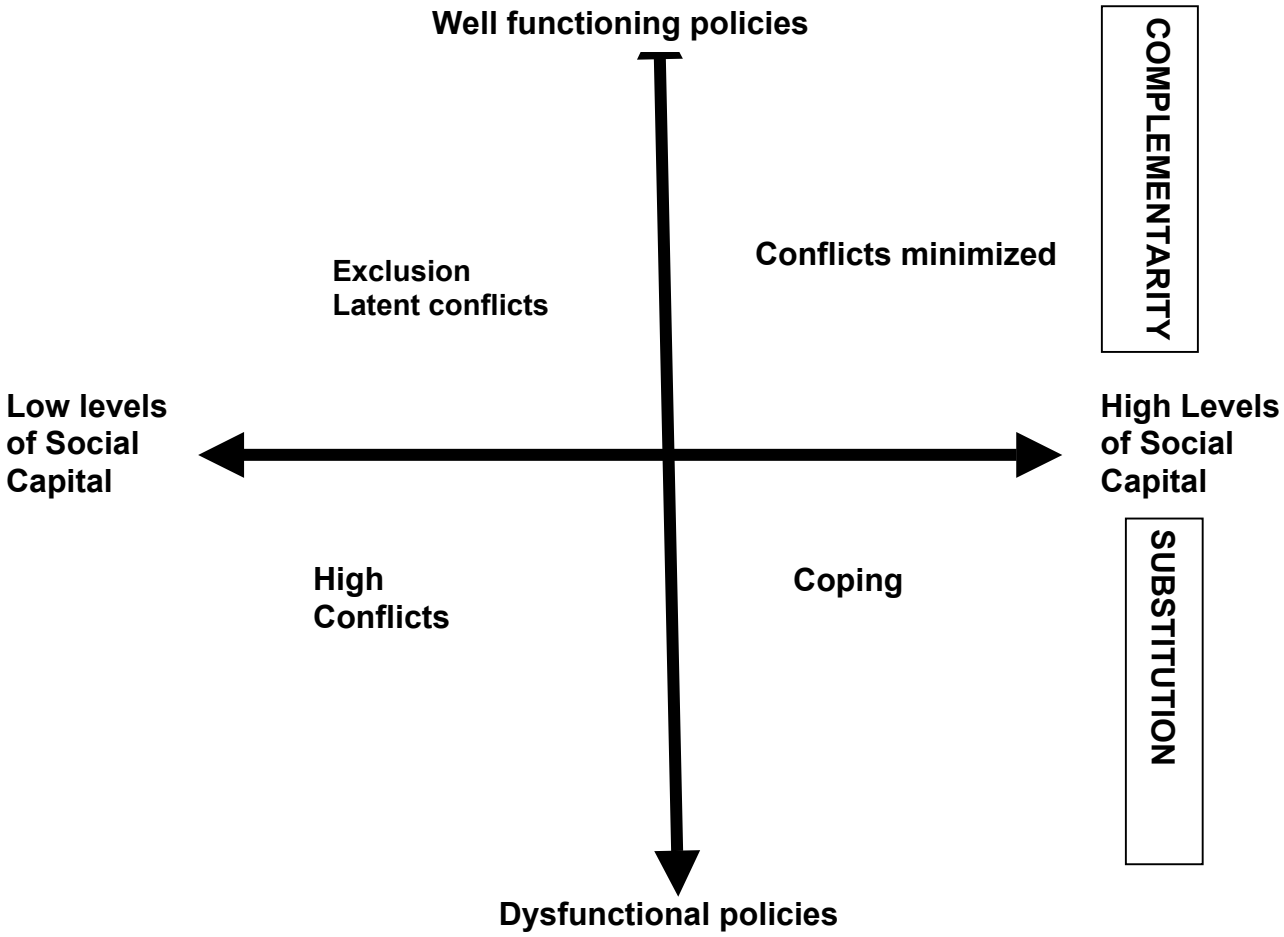
		often lack expertise, skills or interest in participatory natural resource management
Alternative conflict management systems (Synergy approach)	-Promotes conflict management and resolution by building on shared interests and finding points of agreement -Processes resemble those already existing in many conflict management systems -Low cost and flexible -Fosters a sense of ownership in the solution and its process of implementation -Emphasizes building capacity within communities so local people become more effective facilitators and handlers of conflict.	-May encounter difficulties in getting all stakeholders to the bargaining table -May not be able to overcome power differences among stakeholders in that some groups remain marginalized -Decisions may not always be legally binding -Some practitioners may try to use methods developed in other countries without adapting them to the local contexts

Source: Adapted from Matiru 2000

The study analysed the ways in which social capital and local policies complement each other in solving conflicts over the use and management of natural resources. Based on the findings, we suggest the "synergy approach" of social capital (Woolcock and Narayan 2000) and local policy for managing conflicts. This approach (Figure 4) contends that policies or social capital alone do not possess the resources needed to promote broad-based and sustainable conflict resolution strategies. The synergy between local policies and social capital is based on *Complementarity and embededness*. Complementarity refers to mutually supportive relations between public and private actors, local government and local communities and is exemplified in the decentralization framework that links state institutions to local communities in Uganda. Embededness refers to the nature and extent of the ties connecting people and communities and public institutions. Under decentralization, policy makers, political leaders and public officers are likely to be embedded in local social relations and hence may be under pressure by the community to perform and be responsive to them.

The results of the study showed that a range of conflict minimizing strategies flow from different types and combinations of social capital and local polices. In communities and households with high levels of social capital, there was a complementarity between local policies and local communities, and conflicts minimizing strategies were more likely to be effective. Conversely, as in the case of gender related conflicts, there was an unexpected relationship between levels of social capital and incidence of conflicts. This suggests that in some cases, social capital increases conflicts. However, when local policies and social capital were combined in a positive sum way, conflicts were likely to be minimized. However, this synergy may only work where there are high levels of social capital, social institutions and well functioning government policies that are coherent and credible. In the case of park conflicts, low social capital (as expressed in bridging and linking social capital) and weak policies lead to rampant conflicts and substitution of local council powers to resolve conflicts and arbitrate disputes by park authorities or conflicting government policies.

Figure 4: Conceptual framework-Relationships between Social Capital, Local Policies and Conflicts



Source: Adapted from Woolcock and Narayan (2000)

The "synergy approach" suggests that the tasks or research should be to identify the nature and extent of community's social capital and formal institutions and the interaction between them (particularly the extent of bridging and bonding social capital) and to determine how the positive manifestations of social capital (cooperation, trust, and institutional efficiency) can enhance the formulation and implementation of byelaws and other dysfunctional policies so as to minimize conflicts.

6 Conclusion: Strengthening Social Capital and Building Capacities for Managing Natural Resources Conflicts

6.1 Summary

The study aimed at improving our understanding of the nature and types of conflicts associated with the use and management of natural resources, and their resolution mechanisms. Results of this study showed that the types and dimensions of NRM conflicts are complex, ranging from intra-and supra-household gender relations to antagonist, distrustful relationships and violent clashes amongst farmers, and between farmers, local communities, government and external institutions. These include conflicts between multiple local resource users (agriculturalists, livestock owners, upstream and downstream users) who use the resources for multiple purposes (cultivation, grazing, income, and domestic uses, etc.), and rules (national policies, byelaws and community regulations), as well as conflicts between local communities concerns for better livelihoods and national and international concerns for environment conservation.

The study identified a number of local level strategies that have evolved within the community to manage conflicts. These include social capital based mechanisms and formal mechanisms for reinforcing byelaws and other local policies. These mechanisms certainly have a number of strengths and have been effective in some cases. But we also found that they have some problems and biases, and in some cases have escalated conflicts. For example, analysis of conflict narratives showed that local policies and social capital based mechanisms did not always ensure fairness, especially to women, and other farmers embedded with fewer assets, human, financial, social and political capital. Results further revealed that a range of conflict management strategies flow from different types and combinations of social capital and local polices. Conflict management strategies were likely to be more effective in communities with high levels of social capital and where there were coherent and credible byelaws. It was evident that the capacities of different actors, resources users, and policy makers and leaders was rather limited and needed to be enhanced.

Many of the recommendations of the study suggest that the capacities of different actors, resources users, local communities, and policy makers to address NRM conflicts can be enhanced by developing and implementing effective approaches, methods and tools for the management of conflicts, building the necessary human and social capital as well as policy processes for minimizing conflicts. These recommendations were reinforced at the end-of-project policy stakeholder feedback workshop attended by over 80 participants representing farmers, pilot local communities, political/district leaders and policy makers from the pilot communities, sub-counties and districts, as well as invited political leaders and policy makers from the neighbouring districts of Kanungu, Rukungiri and Kisoro. Some of these recommendations call for immediate action to consolidate the … … process and expand the policy action research to other areas in Kabale and neighbouring districts. It is further recommended to disseminate and increase awareness of the existing byelaws and to build the capacity of key stakeholders in formulating and implementing policies and managing conflicts.

6.2 Implications for Policy, Research and Development in NRM

The recent attention to NRM conflicts reflects a growing awareness of the scope, magnitude, and implications of NRM conflicts (Castro and Nielsen 2003, Means *et al.* 2002, ECAPAPA 2000, Mascarenhas 2000, Buckles and Rusnak 1999, Scott 1998, Hendrickson 1997). With the current trends of persistent poverty, population pressure, urbanization, environment conservation, decentralization, and democratization, conflicts over the use and management of natural resources are intensifying and are contributing to further degradation of natural resources. If continued to be ignored, such NRM conflicts can escalate and result into further degradation of natural resources, erosion of social capital, human capital and pose significant challenges to achieving sustainable rural livelihoods (Castro and Nielsen 2003). Promoting and supporting alternative strategies for minimizing these conflicts is of critical importance for policy, research and development. Therefore, the management of the inevitable conflicts in NRM is important as public good, and merits policy support (Tyler 1999).

In their recent critique of policy research on African agriculture, Idachaba (2002) and Omamo (2003) recommend that policy researchers must get closer to the reality and become more concerned with practical issues of implementation, i.e. how to promote the feasibility of the alternative policy options and recommendations, and how to get the intended beneficiaries, small-scale resource poor farmers, to influence policies in NRM. The findings reported in this report have several implications for NRM policy, research and development. Many of them are self explanatory, and derive from local stakeholders' own suggestions on strategies to resolve conflicts and improve the management of natural resources. These recommendations tend to answer the *what* questions, but do not give sufficient guidance on the *how* questions.

Omamo (2003) proposed different approaches to policy research, focusing on piloting action research in case studies of innovative approaches for identifying convincing *how to* answers. These approaches require facilitating, strengthening and building social capital and local capacity to master more participatory and collaborative methods to conflict management, to help local communities and actors to solve their conflicts. Castro and Nielsen (2003), Means *et al.* (2002) and Hendrickson (1997) as well as several other scholars conclude that effective prevention and management of conflicts requires skills and tools, often lacking in many organizations, institutions and communities. However, building these skills in itself will not result in effective conflict management outcomes. People need to apply these skills and tools for conflict management in a more conducive policy and social environment. We therefore envisage that the second phase of this project will support a participatory learning and action research on innovative and alternative conflict management approaches that allow different stakeholders, especially local stakeholders, to participate in conflict management in a more equitable way. The rationale for the second phase is the recognition that the need for new approaches, tools and actors becomes self-evident to policy-makers after they have seen some evidence of the efficiency in action (Tyler 1999).

With current decentralization in Uganda, there are significant opportunities that research and development can utilize to influence policies, and to translate research results into policy and decision-making of wider communities. Using a participatory policy action research process, there is need to initiate and support relevant policy action research and enhance the capacity of decentralized local councils and local communities to manage and transform conflicts that affect the use of natural resources into opportunities for collective learning, collaboration and collective action. The participatory policy action research should aim at

consolidating the gains of this study on understanding conflicts, expanding and upscaling the results to other areas in Kabale and neighbouring districts of Kanungu, Rukungiri and Kisoro, as well as to the eastern highlands of Mbale and Kapchorwa districts, and elsewhere in eastern Africa. This would be required so as to identify and support alternative policy options, strategies and sustainable mechanisms that can help to minimize conflicts over the use and management of natural resources in the highland areas.

Specifically, such study should focus on:

- Consolidating the participatory policy learning and action research initiated in the first phase and disseminating the results, methodologies and processes of conflict analysis and participatory byelaw formulation and implementation;
- Expanding the scope of the study to new areas in the highlands of south-western and eastern Uganda to increase awareness and better understanding of NRM conflicts; and to refine methodology for participatory policy action research for conflict management;
- Building the capacity of local communities and local government structures to manage conflicts;
- Promoting and supporting policy dialogue, policy action, policy initiatives and NRM innovations to minimize conflicts; and
- Synthesizing lessons learned and generate policy recommendations for sustainable and equitable conflicts management for national application.

In terms of intended outputs for policy use and research, such study will identify and promote opportunities and strategies to strengthen the capacity of local governments and local communities to manage conflicts and accelerate wider-scale adoption and dissemination of NRM technologies. Findings would offer innovative practical insights to alternative conflicts management mechanisms that can be translated into policy formulation, revision and implementation. These would include mechanisms that researchers could use to influence and support policy actions which accelerate the adoption of NRM technologies. A comparative analysis and synthesis of byelaws and other local policies and assessment of their formulation and implementation mechanisms and effectiveness, would help harmonize byelaws and other local policies of general applicability and develop effective strategies for their effective implementation. Such analysis across the project areas will provide materials for synthesizing lessons and findings of regional importance and developing a framework and methodology for participatory policy action research for managing conflicts. Finally, these can be packaged to produce practical guides and manuals for participatory policy analysis and alternative conflict management that can be used by civil society and development organizations as well as decentralized local governments in the ASARECA region and beyond.

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